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## GLEANINGS IN BEE CULTURE.

ESTABLISHED IN 1873.

DEVOTED TO BEES, HONEY, &amp; HOME INTERESTS.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, - MEDINA, O.

A. I. ROOT, EDITOR.

ERNEST R. ROOT, - - ASSOCIATE EDITOR.

J. T. CALVERT, BUSINESS MANAGER.

**Terms.** \$1.00 per annum; two years, \$1.80; three years, \$2.50; five years, \$3.75, *in advance*; or two copies to one address, \$1.80; three copies, \$2.50; five copies, \$3.75. These terms apply both to the United States, Canada, and Mexico. To all other countries in the Universal Postal Union, 18 cents per year extra for postage. To all countries out of the U. P. U., 42 cents per annum extra.

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1 to 2 insertions, per line.....	20c
3 to 5 " " " ".....	19c
6 to 11 " " " ".....	18c
12 to 17 " " " ".....	17c
18 to 23 " " " ".....	16c
24 insertions " " " ".....	15c

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On 8 inches or more, 2c per line less.

On less than 5 lines space, 1c per line more than above rates.

By nonpareil line we mean  $\frac{1}{12}$  of an inch of space up and down the column. Twelve nonpareil lines of space, therefore, measure one inch. Remember that an ad. that is "displayed" may have only two or three lines of big letters, yet may measure 24 nonpareil lines of space.

For electrotyped advertisements we will allow an additional discount of 5 per cent.

A. I. ROOT, Medina, O.

## SUPPLIES!

Standard Goods. Best shipping point. Reasonable prices. Thirty-page Catalogue free. WALTER S. POWDER, 175 E. Walnut St., Indianapolis, Ind.

## CLUBBING LIST.

We will send GLEANINGS with—  
 The American Bee Journal, weekly, (\$1.00) \$1.75  
 The Canadian Bee Journal, weekly, (.75) 1.65  
 The Bee-Keepers' Review, (1.00) 1.75  
 The British Bee Journal, (1.50) 2.00  
 American Apiculturist, (.75) 1.70  
 American Bee-Keeper, (.50) 1.40  
 All of the above journals, 5.65

American Agriculturist,	(\$1.50)	2.25
American Garden,	(2.00)	2.60
Prairie Farmer,	(1.50)	2.35
Rural New-Yorker,	(2.00)	2.90
Farm Journal,	(.50)	1.20
Scientific American,	(3.00)	3.75
Ohio Farmer,	(1.00)	1.90
Popular Gardening,	(1.00)	1.85
U. S. Official Postal Guide,	(1.50)	2.25
Sunday-School Times, weekly,	(1.50)	1.75
Drainage and Farm Journal,	(1.0)	1.75
Fanciers' Monthly,	(1.00)	1.75
Illustrated Home Journal,	(.50)	1.35
Orchard and Garden,	(.50)	1.40

[Above Rates include all Postage in U. S. and Canada.]

Names of responsible parties will be inserted in either of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

## UNTESTED QUEENS

For \$1.00 from July 1st. till Nov. 1st.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with \*, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner or later, see rates in price list.

*A. I. Root, Medina, Ohio.	
*H. H. Brown, Light Street, Col. Co., Pa.	7tf d90
*Paul L. Viallon, Bayou Goula, La.	7tf d90
*S. F. Newman, Norwalk, Huron Co., O.	7tf d90
C. C. Vaughn, Columbia, Tenn.	9tf d90
Jenkins & Parker, Wetumpka, Ala.	9tf d90
E. L. Gould & Co., Brantford, Ont., Can.	9tf d
*W. A. Compton, Lynnville, Giles Co., Tenn.	9tf d
*Oliver Hoover & Co., Snyderstown, Northumberland Co., Pa.	19tf d90
John Shearer, Osceola, Wash. Co., Va.	11d
D. A. McCord, Oxford, Butler Co., O.	11-23d
*F. H. & E. H. Dewey, Westfield, Hamp. Co., Mass.	11-9
A. J. Higgins, Washington Mills, Dub. Co., Ia.	14-12
*S. P. Roddy & Bro., Mt. St. Marys, Md.	15-17-19d
*E. S. Eaglesfield, Berlin, Green Lake Co., Wis.	

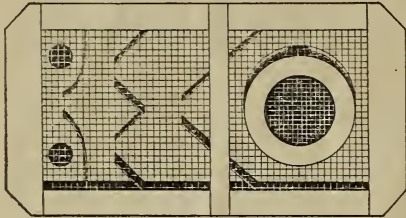
## HIVE MANUFACTURERS.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.	
P. L. Viallon, Bayou Goula, Iberville Par., La.	7tf d90
C. W. Costellow, Waterboro, York Co., Me.	1tf d90
Leahy Mfg. Co., Higginsville, Laf. Co., Mo.	9tf d90
Jenkins & Parker, Wetumpka, Ala.	9tf d90
W. T. Falconer Mfg. Co., Jamestown, N. Y.	7tf d

**ONE COLONY** Saved from Death the Coming Winter Would Repay the cost of a copy of "ADVANCED BEE CULTURE" ten Times Over. In 5 of its 32 Chapters may be Found the Best That is Known upon Wintering Bees. It costs 50 cents but its Perusal may Make you \$50 Richer next Spring. The "REVIEW" and this Book for \$1.25. If not Acquainted with the "REVIEW," send for Samples. W. Z. HUTCHINSON, Flint, Michigan.

## The Latest and Best Bee-Escapes!



**The "New Dibbern" and "Little Giant."**  
Two entirely new escapes just out. They work rapidly, and no bees return through them. They ventilate the super, and all parts can be seen and instantly cleaned. Satisfaction guaranteed or money refunded. 16-17d

Prices, by mail, either pattern, 20c.

" " per dozen, \$2.25.

No patents. Discounts to the trade.

**C. H. DIBBERN, Milan, Ill.**

Please mention this paper.

## Western Bee-Keepers' Supply House

Root's Goods can be had at Des Moines Iowa, at Root's Prices.

The largest supply business in the West. Established 1885

Dovetailed Hives, Sections, Foundation, Extractors, Smokers, Veils, Grates, Feeders, Clover Seeds, etc. Imported

Italian Queens, Queens and Bees. Sample copy of our

Bee Journal, "The Western Bee-keeper," and Latest

Catalogue mailed Free to Bee-keepers.

JOSEPH NYSEWANDER, DES MOINES, IOWA.



3ftdb

☞ In Response

—ANSWER—

**TESTED ITALIAN QUEENS, 75 CTS., HYBRIDS, 25 CTS.**

1 re-queen my yard every year. None of the queens older than one year. T. H. KLOER, 16tfdb 42; Willow St., Terre Haute, Ind.

## BEE-KEEPER'S GUIDE.

16TH THOUSAND JUST OUT.

Plain, Practical, Scientific. Every farmer and bee-keeper should have it.

PRICE REDUCED TO \$1.00. Liberal discount to dealers. Address 8-18db

**A. J. COOK, Agricultural College, Mich.**  
Please mention this paper.

**A Four-Color Label for Only 75 Cts. Per Thousand.**

Just think of it! we can furnish you a very neat four-color label, with your name and address, with the choice of having either "comb" or "extracted" before the word "honey," for only 75 cts. per thousand; 50 cts. per 500, or 30 cts. for 250, postpaid. The size of the label is 2½x1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

**A. I. ROOT, Medina, O.**

## THE CANADIAN

**Bee Journal Poultry Journal**

Edited by D. A. Jones. Edited by W. C. G. Peter.

75c. Per Year.

75c. Per Year.

These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cts.

**The D. A. Jones Co., Ltd., Beeton, Ont.**

☞ Please mention GLEANINGS.

## AMERICAN BEE JOURNAL

32 pages—\$1.00 a year—Sample Free.

The oldest, largest and cheapest Weekly bee-paper

**THOMAS G. NEWMAN & SON,**

CHICAGO, ILL.

**MUSICAL INSTRUMENTS**  
**MURRAY & HEISS**  
CLEVELAND OHIO.  
SEND FOR CATALOGUE.

Please mention this paper

**Funics. Apis Niger. Punics.**

The most wonderful race of bees on earth. Full description of these bees with prices of queens, full colonies and nuclei, in the August (1891) American APICULTURIST. Sample copies free. Address 15tfdb

**HENRY ALLEY, Wenham, Mass.**

Please mention this paper.

**FALL PLANTS** HATCHING AND FALL PLANTING PAYS. Brown and white Leghorn, Plymouth Rock, and Black Minorca Eggs, \$1.25 per 13. Strawberry plants, 100, \$1; 1000, \$3.50. Raspberry plants, 100, \$1.50; 1000, \$5. Illustrated circular free. ST. MARYS, MO.

Please mention this paper.

**Syracuse, New York,**  
**FOR ALL OF A. I. ROOT'S APIARIAN SUPPLIES.**  
**FOUNDATION is Our Own Make.**  
**F. A. SALISBURY.**

In writing to advertisers please mention this paper. 4tfdb

## SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.

**NOVELTY CO.,**

**Rock Falls, Illinois.**

☞ In responding to this advertisement mention GLEANINGS.

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### CONVENTION NOTICES.

The fifth semi-annual convention of the Missouri State Bee-keepers' Association will be held at Sedalia, Mo. Wednesday and Thursday, Oct. 7 and 8. Rates for all those attending are promised at the Sicker and Kaiser Hotels at \$1.50 per day each. J. W. ROUSE, Sec'y, Mexico, Mo.

## Wants or Exchange Department.

Notices will be inserted under this head at one half our usual rates. All advertisements intended for this department must not exceed five lines, and you must say you want your advt in this department, or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale, can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these "swaps."

**WANTED**—To exchange wall paper, from 5c a roll and up, for honey. J. S. SCOVEN, 12tfdb Kokomo, Ind.

**WANTED**—To exchange pure Scotch collie pups for tested Italian queens. 12tfdb N. A. KNAPP, Rochester, Lorain Co., O.

**WANTED**—All the names of persons running apple-driers. Will pay liberally for same. W. D. SOPER & Co., Box Makers, 15-18db Jackson, Mich.

**WANTED**—To exchange apiary of 160 colonies, with every thing needed in the business—first class and in first-class location—for land, city lots, mdse, or offers. To those meaning business I invite the closest inspection of my outfit and location. 17-18d H. L. GRAHAM, Letts, Ia.

**WANTED**—To exchange two printing-presses, type, etc. Want honey, Barnes saw, foot-power press, or body type. Write for printed list of articles to exchange. 17tfdb MODEL STAMP WORKS, Shenandoah, Ia.

**WANTED**—To rent or purchase an apiary of one or two hundred colonies in California or Arizona. A. CAIDER, Hebron, Boone Co., Ky. 17-18d

**WANTED**—We will pay the highest market price for extracted honey. Send sample, and state quantity and price. BALDWIN & AVERY, Independence, Mo.

**WANTED**—A good practical man to work a fine fruit farm of 6 acres, six miles from Columbus, O. A specialty is made of small fruits, strawberries, raspberries, blackberries, grapes, etc. Must be a man of experience; no others need address. Also, will either rent or sell. 18d EARLE CLICKINGER, Columbus, O.

**WANTED**—To exchange one fine breech-loading shotgun, one Safety bicycle, used but little (only one year from shop), for bees or supplies within 300 miles of F. H. HOWARD, 18-19d Garden City, Kan.

**WANTED**—To exchange a No. 1 saw-table, parallel gauge, hinge top, shaft, belt, 2 saws, emery wheel, not used over two mos.; a fine 3-frame observatory hive; a 60 lb. spring scale. All for extracted honey (white), beeswax, or offers. 18-19d H. L. GRAHAM, Letts, Iowa.

**WANTED**—The address of any ingenious, enterprising person who is willing to earn 100 cents to get a dollar. D. S. HALL, South Cabot, Vt.

**WANTED**—A small home in South Florida; also information regarding St. Petersburg, Fla. 18d THOS. GEDYE, Grand Ridge, La Salle Co., Ill.

**WANTED**—To exchange pure Italian bees for a fine French achromatic telescope. Write description, stating price. Address 18d W. J. HILLMAN, Green River, Vt.

**WANTED**—To exchange fruit-trees, grapevines, or ornamental shrubs, for bees, honey, or supplies. Send for catalogue. EARL WALKER, 18d Box 316, New Albany, Ind.

**WANTED**—To exchange one self-inking printing-press, 3½x5½, for supplies. Address 18d J. G. RISLOW, Lake Mills, Ia.

**WANTED**—To exchange Barred Plymouth Rock chicks for comb honey. A. A. SIMPSON, 18-19d Swarts, Pa.

**WANTED**—To exchange queens, bees, winter cases, and all supplies in general, for a good power scroll saw, and light planer. 18d HILL MFG Co., Box 120, Dennison, O.

**WANTED**—To exchange apiarian supplies or nursery stock for raspberry tips. Address 18d J. B. MURRAY, Ada, O.

**WANTED**—To know who can sell me cheap a second-hand foot-power saw, in good order. 18d D. P. HOLT, Americus, Ga.

## MOORE'S ITALIANS IN CUBA.

Dr. Jas. Warner, Havana, Cuba, says: "They are the best I have—gentle and good workers. They are the first out and the last in; and last winter, when we had some cold weather, they were the only ones that were out at all." See advertisement in another column.

In responding to this advertisement mention GLEANINGS.

## WHY NOT

Plant that Early-Potato Ground to

## STRAWBERRIES

at once, insuring a family supply for next season? The following five best kinds, 100 plants, by mail prepaid, securely packed in moss for \$1: 20 Haverland, 20 Bubach, 20 Warfield No. 2, 20 Jessie, 20 Monarch. All large, well-rooted plants. Price list free.

I. A. WOOLL, ELSIE, MICH.

In responding to this advertisement mention GLEANINGS.

**FOR SALE**—20 hives of bees for \$60.00; Italians and hybrids; 8 Simplicity frame hives. Each hive is boiling over with bees. If sold all to one party, will throw in free a 15-gallon honey-extractor, cost \$12.00. C. E. PRICE, 18-19d Smithtown Branch, Long Island, N. Y. Mention this paper.

## PASTEBOARD BOXES.

CRAWFORD'S SECTION CARTONS ARE JUST WHAT YOU WANT.

SEND FOR NEW PRICE LIST.

A. O. CRAWFORD,

11tfdb

SOUTH WEYMOUTH, MASS.

## For Sale.

## PORTABLE ENGINE AND BOILER, 4 HORSE POWER.

In good condition. Address

LOWRY JOHNSON, Masontown, Pa.

Manufacturer Utility Bee Hives, Smokers, and Feeders. 17tfdb

## HONEY COLUMN.

### CITY MARKETS.

**NEW YORK.**—*Honey.*—Comb honey is beginning to come in very freely now, and the demand is also increasing. Fancy 1-lb. section, 16@17; nice 1-lb. sections, 14@15; fair, 13@13½; fancy 2-lb. sections, 14; fair 2-lb. sections, 13; buckwheat, 1-lb., 11; 2-lb., 10. Extracted honey, little demand, 7@7½.

*Beeswax*, limited demand, 25@27.

Sept. 10. CHAS. ISRAEL & BROS.,  
110 Hudson St., New York.

**CINCINNATI.**—*Honey.*—There is no change since our last. Honey of all kinds keeps coming in slowly but steadily. There is a fair demand for all but honey-dew honey, of which there is an unusually large amount. Comb honey brings 14@16 in the jobbing way, for best white; extracted honey 5@8 on arrival.

*Beeswax.*—Demand is fair, at 23@25 on arrival, for good to choice yellow. CHAS. F. MUTH & SON,  
Sept. 10. Cincinnati, O.

**NEW YORK.**—*Honey.*—Comb honey arriving now, but demand very light yet. We quote: Fancy white, 1-lb., 16; 2-lb., 14; fair white, 1-lb., 13@14; 2-lb., 12. Extracted, supply large, and demand still limited. California, 7½; Florida and basswood, 7@7½; common Southern, 65@70. *Beeswax*, stagnant; good Southern, 25@26. F. G. STROHMEYER & CO.,  
Sept. 12. 123 Water St., New York.

**KANSAS CITY.**—*Honey.*—The demand is good with light supply, the new crop arriving; but about half dark, mixed with honey-dew, the other half fair quality. One-pound comb white, 16@17 cents; dark, 1-lb., 12; 2-lb., white, 15; dark, 10@11; extracted, white, 7@7½; dark, 5@6. *Beeswax*, 25@26.

Sept. 9. HAMBLIN & BEARSS,  
514 Walnut St., Kansas City, Mo.

**ALBANY.**—*Honey.*—Prices quoted in last issue not maintained, and we dare not quote above 15 for fancy white clover in pound sections. No. 2 clover, 12@13. Buckwheat, 10@12. 1½-lb. sections sell at about 1 cent a pound less. Extracted, very dull and but very little demand yet.

Aug. 22. CHAS. McCULLOCH & CO.,  
393, 395, 397 Broadway, Albany, N. Y.

**NEW YORK.**—*Honey.*—Comb honey arriving very freely, and sells at following prices:

1-lb. sections, fancy, 15@16; same, fair, 13@14; 2-lbs., fancy, 13@14; same, fair, 12. No buckwheat comb in market yet. Extracted, supply good, demand limited. We quote: California, 7; basswood, 7; orange bloom, 7@7½. Southern, common, 65c per gal., choice 70. HILDRETH BROS. & SEGELKEN,  
23 & 30 West Broadway, New York.

**PHILADELPHIA.**—*Honey.*—We think that the Philadelphia market will be the best for honey this year. As we shall be the largest dealers here, we can quote reliable figures. We quote: Fancy white, 16@18; and sometimes as high as 20, as to style of package. No. 2 white, 14@16. E. J. WALKER,  
Sept. 10. 31 South Water St., Philadelphia, Pa.

**CHICAGO.**—*Honey.*—Market quiet; choice sells at 15@16. Not much of it coming. Nearly all more or less strained, or out of condition. Dark, dull at 13; extracted, 6@7@8, according to quality. Now is a good time to forward comb honey. *Beeswax*, 27.

Sept. 9. R. A. BURNETT,  
Chicago, Ill.

**KANSAS CITY.**—*Honey.*—The demand for 1-lb comb is fair; receipts light; demand for extracted larger than the receipts. 1-lb. comb, white, 15@16; 1-lb. comb, dark, 10@12; extracted, white, 7@7½; extracted, dark, 5@6. *Beeswax*, 23@25.

Sept. 10. CLEMONS, MASON & CO.,  
Kansas City, Mo.

**ST. LOUIS.**—*Honey.*—The trade is honey rather inactive. Until colder weather we don't look for much demand. However, we are, as usual, disposing of considerable, our last sale being 15,000 pounds. We quote: Comb, 10@12; extracted, 4½@5½. Basswood, 26. D. G. TUTT GRO. CO.,  
Sept. 9. St. Louis, Mo.

**DETROIT.**—*Honey.*—Comb honey, 11@12½, with good supply. Extracted, 7@8. *Beeswax*, 25@26. M. H. HUNT,  
Sept. 9. Bell Branch, Mich.

**ST. LOUIS.**—*Honey.*—Choice white clover, comb, 13@14; fancy, 15; fair, 12. Extracted, small cans, 7@8; large 6¼@6½; barrels, 5½; southern, in barrels, 5@5½. *Beeswax*, choice, 24½; fair, 24. W. B. WESTCOTT & CO.,  
Sept. 9. St. Louis, Mo.

**FOR SALE.**—6000 lbs. extracted honey, in 60-lb. cans. C. H. STORDOCK, Durand, Winnebago Co., Ill.

**FOR SALE.**—1000 lbs. of white clover and basswood honey, in 60-lb. cans. How much am I offered for it on board cars here? THOMAS GEDYE,  
Grand Ridge, La Salle Co., Ill.

**FOR SALE.**—Extracted honey, in 14-gal. kegs; 7½ cts. M. ISBELL, Norwich, Chen. Co., N. Y.

**FOR SALE.**—7 barrels of dark extracted honey. Will run near 500 lbs. to barrel. Make us offers on lot, or any amount wanted. J. A. THORNTON, Lima, Ill.

I am prepared to furnish pure extracted honey in 60-lb. tin cans. New cases and cans; graded goods. Carloads a specialty. Address E. LOVETT,  
11tfdb San Diego, Cal.

## Honey, Beeswax, Etc.

We are now in position to receive honey and beeswax on consignments, and to obtain best market prices for comb and extracted honey. Last year we could have disposed of as much again honey as we received, and our outlet this year will be still better. Correspondence solicited.

CHAS. ISRAEL & BRO.,  
110 HUDSON ST., N. Y.

Dealers and Commission Merchants in Honey, Beeswax, Maple Syrup, Sugar, etc. 16tfdb  
Please mention this paper.

## Basswood

## HONEY,

### EXTRA QUALITY.

### USUAL LOW PRICES.

### ADDRESS

### JAMES HEDDON,

18-19d

DOWAGIAC, MICH.

Please mention this paper.

## 50 TESTED QUEENS, 75 Cts.

Young Italians guaranteed in every particular. Sample 5-banded bees, 2c.

F. C. MOKROW, Wallaceburg, Ark.  
Please mention this paper.

## CYCLONE HONEY - CASES.

IT IS "AN ILL WIND THAT BLOWS NOBODY ANY GOOD."

That terrific cyclone that swept through this place, leaving a path of ruins in its wake, demolished some valuable timber. I have had some of this worked up into shipping-cases for honey, for the benefit of my bee-keeping friends. I can afford them cheap. Write me if you wish to know more of these cyclone relics. H. R. BOARDMAN,  
East Townsend, Huron Co., Ohio.

Please mention this paper.

## LADIES' FINE SHOES.

PRICE ONLY \$2.

Genuine Kid, Soft Soles, Elegant Style; Broad or Narrow Toe. Sizes, 2 to 8. C, D, E, and E E widths. This Shoe is sold at \$3 in all retail stores.

OUR PRICE \$2, POSTPAID.

FIT, STYLE, AND WEAR GUARANTEED.

NO SHODDY, BUT GOOD SHOES.

Send P. O. order. Registered Letter or Postal Note.

C. L. GRIESINGER, MEDINA, OHIO.

Reference, GLEANINGS.

18-19-2-21d

In writing advertisers please mention this paper

## SPECIAL NOTICE.

50 colonies of Italian bees for sale. They are in first-class condition; hives chock full of bees and honey. Also a fine lot of choice queens for sale. Not going out of business, but shall continue as ever to fill orders for any thing in our line of trade. For full particulars address 17-18d.

J. M. YOUNG,

BOX 374.

PLATTSMOUTH, NEB.

Please mention this paper.

### BY RETURN MAIL, 400

Golden Italian Queens. Tested, \$1.00 each; untested, 70c, 3 for \$1.80. HIVES, SECTIONS, FOUNDATION, and all BEE-KEEPERS SUPPLIES kept in stock. Catalog free. JOHN NEBEL & SON, High Hill, Mo.

Please mention this paper.

**DON'T** you want to improve your stock? Don't you want nice large business Italians that will just "roll in the honey"? Seven years careful breeding from the best stock obtainable; 65 queens sold, and never heard of but one mis-mated. Queens large, yellow, and prolific. Warranted, 75c; 3 for \$2.00; or a select breeder, \$1.50. Your orders appreciated. Return mail. 16tfdb.

W. H. LAWS, LAVACA, ARKANSAS.

In responding to this advertisement mention GLEANINGS.

## FOR SALE.

One 40-horse-power steam engine and locomotive, or fire-box boiler, in good order. Price \$500 on cars here. 16-17-18d

T. A. POTTS, Martinsburg, W. Va.

Please mention this paper.

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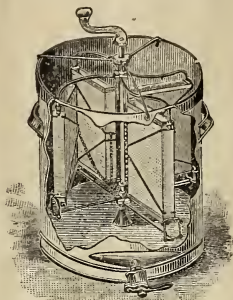
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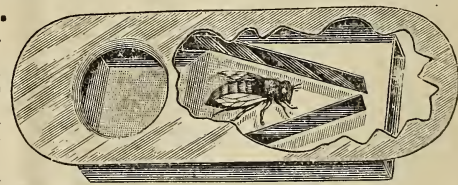
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Vol. XIX.

SEPTEMBER 15, 1891.

No. 18.

## STRAY STRAWS

FROM DR. C. C. MILLER.

ARE you going to Albany?

DEPARTED THIS LIFE—the *Bee World*.

THE blood of a bee is not red, but colorless.

CARNIOLANS make worker cells of larger size than those made by black bees.

EDITOR NEWMAN has been laboring with one of his correspondents to make him believe a colony is a colony and not a swarm.

HOW I WISH I knew all about bees! But if there were no more hard nuts to crack, bee-keeping would lose some of its brightest charms.

HONEY-DEW honey should not be sold as good honey, if sold at all. Can't you feed it next spring, and get it all used in brood-rearing?

AN AUTOMATIC SMOKER has been invented by the French apiculturist, M. de Layens, which is said to give good satisfaction. Costs 14 francs.

EXTRACTING SECTIONS that are partly filled is a fussy sort of job. Is it not better to feed to the bees, and then extract, if necessary, from the brood-combs?

BEEWAX rendered with sulphuric acid has "absolutely no odor." Then I shouldn't like it so well. I do like the odor of good foundation, and it's possible the bees do.

I AM WITH friend Larrabee in his opposition to slits for comb-guides in top and end bars. Should the many who don't use them be obliged to suffer then, in order to accommodate the few who do use them?

J. H. LARRABEE asks if I'm afraid of  $\frac{5}{8}$  top-bars sagging. Somewhat; but I find more burr-combs over top-bars  $\frac{3}{8}$  thick than over  $\frac{1}{2}$ . So I'm doubtful about  $\frac{3}{8}$  preventing burr-combs.

OF PUNIC BEES, GLEANINGS says: "It is admitted that they are bad propolizers." "A Hallowshire bee-keeper" (the introducer) says in the *Journal of Horticulture* that they are not bad, but good propolizers, for they fill cracks or chinks with an enormous quantity of propolis, but do not put it on their combs.

ANOTHER CURE for laying workers. From F. H. & E. H. Dewey, in *American Bee-Keeper*. Put the infected colony in a ventilated box without combs for 4 or 5 hours, in the shade or in the cellar; then drop in a caged queen, preferably a laying one, and in about two hours more pour the bees before a hive devoid of all brood, releasing the queen to run in with the bees.

GLEANINGS says that sheets made of wax rendered with sulphuric acid have "absolutely no taste after chewing pieces of them for half an hour." I should think not. Almost any thing would have all the taste chewed out of it before the half-hour was up.

A. I. ROOT, in a private talk, once raised the question of using excluder zinc between the top-bars. Now that thick top-bars seem to be taking the place of honey-boards, and yet queen-excluders are used for extracted honey, might it not be a good plan to combine in some way top-bars and excluders?

YOUR WIFE doesn't like to let you have bees-wax in her pans and kettles. It's a big job for her to clean them up. Well, clean them up yourself. Set them over the fire till the wax melts; then, without any water or any thing else, wipe out all the wax with old newspapers, perhaps finishing up with dry rags.

ELI SHEPPERD, in *Home and Farm*, says mellilot is highly valued in Hale county, Ala., as a fertilizer, bringing "youth and renewed freshness to the most worn piece of lime land." "It makes a nourishing and finely perfumed hay. When fed to cows it imparts to the products of the dairy a delicate and pleasant flavor."

THE EDITOR of the *American Bee-Keeper* says: "We believe it is generally understood that Italian bees do not work to any extent in buckwheat, while common bees and hybrids usually get a good harvest from it." Is this correct? I had supposed that Italians would work as well as blacks on buckwheat, if nothing better was to be had.

ALLEN PRINGLE, in *C. B. J.*, is down on the doctors, and quotes quite an imposing array of doctors themselves, eminent ones too, to prove that the world would be better off without doctors or drugs. Very likely; but if friend Pringle gets really sick, see if he doesn't send for the doctor. It's born in people to want to be doped and dosed.

INTRODUCING QUEENS. Here's a plan given by H. Spuhler, in *Revue Internationale*. Several hours after the removal of the old queen, put the new one in a little cylinder made of foundation. It is closed at both ends, and furnished with little holes pierced with a needle. After daubing it with honey, put it in the middle of the brood-nest. The bees do the rest.

FRIEND JONES, of the *C. B. J.*, thinks if a young queen be slyly dropped into the top of a hive about dark she would supersede the old queen. I tried superseding quite a number last year by having a young queen hatch out in a cell-protector. They hatch out all right, and would be found peacefully traversing the combs; but before it was time for them to lay, every last one disappeared. If I had removed

the old queen, I have no doubt all would have been lovely.

THE PEACH TOMATO, sent out by the Agricultural Department at Washington, has a decided individuality. It doesn't look shiny, like other tomatoes, doesn't feel smooth, has the shape and size of a not very large peach, and might easily be mistaken for one at a little distance. It seems ripe inside before fully colored, and drops from the stem when quite ripe. It didn't rot on my ground, while *Ignotum* and *Mikado* did.

## ARE WE DRIFTING FROM OUR MOORINGS?

A WARNING NOTE FROM DOOLITTLE.

I have read with interest what has been said during the present summer about hives and their manipulation, as against the manipulation of frames, as has been the custom of the past; and, unless I am greatly mistaken, there is *not* in this idea all the pecuniary benefit to the bee-keeper that a superficial view of the matter would lead him to expect. The idea embodies, in all of its bearings, unless I am blind in this matter, two things which will be an expensive luxury to the one who adopts this idea of "handling hives instead of frames;" and these two things are, first, a radical change in most of the hives now in use; and, second, the placing of a greater number of colonies in the field, both of which are against us; the latter for all time, and the former for the near future. This changing of hives and fixtures, to the extent to which it has been carried in the past, has been somewhat against us, and the outlook for the future shows no sign of improvement. The changing of hives and fixtures in an apiary that numbers fifty means quite an expense—an expense that will take many *good* years of production to pay it, over and above what might have been secured with the old fixtures, even should the new prove better than the old. Not long ago a "new" hive came out, the claim for which was that it was going to cheapen honey production; for surely the producer must produce his crop at a less expense than he was now doing if he was to be enabled to keep his head above water, in these times of low prices. Have we seen these great things accomplished? Let friend Gravenhorst answer: "I found out something by this new method that did not satisfy me in contrast with the old one. In the course of several years I always got more honey and wax in the old-fashioned way." While friend G. was not speaking of this particular hive as "the new method," yet he but voices what many another has found out. To illustrate more fully just what I mean I will let the reader into a little bit of my past history, together with that of another whose name I will not mention. When I first began keeping bees it was with the express understanding that, after the first outlay (\$35.00) on them, not another cent should be paid out unless they brought it in, and that I would not pay out for new fixtures a cent of what they brought in unless I could see that some pecuniary benefit was coming back in the near future to more than balance what I would pay out, and that I would use up, as far as might be, all of the old, without throwing away that which had cost me a cash outlay. This understanding has been carried out all of these years; and to-day, instead of having only \$500 as my worldly possessions, as I had in that spring of 1869, and living in a tenant house, with my small apiary on somebody's possessions besides my own, I have a comfortable home, consisting

of 30<sup>+</sup> acres of land and the necessary buildings; have enough laid aside to carry me and mine through life, unless something extraordinary should happen to us, besides being enabled of later years to do something to advance the Master's interests in the world, and that which tends to uplift humanity; all having come from the bees over and above what I have paid out for them, and I still use the same old Gallup hive with which I started, and see no reason for wanting or desiring a change.

In 1869, the "another" spoken of above, counted his worldly possessions far above mine, produced much more honey each year than I did, as a rule obtained better prices, but laid out each year all or more than what the bees produced in "something new," throwing away that of the past which did not suit, and purchasing new again, till a short time ago found him borrowing money that he might still purchase something new in the "bee line," while there were wagonloads of stuff, representing thousands of dollars, to be found strewn about the premises, that had accumulated by this great desire to keep "abreast of the times" and "secure the greatest amount of income with the least capital and labor."

Did any one who reads this ever say to the "good wife," "Can't you wear the old bonnet another year, or get along without that new dress we talked about, so that I can get that new hive, or that foundation-mill, or some other thing about bee culture, that I may succeed better in my pursuit?" And hasn't the baby gone with holes in the toes of its shoes, the children gone with ragged and patched clothes, the wife set up long after the rest were abed, to patch these clothes, and the whole family suffered, that a change for the better (?) might be made in the bee-business, when, as friend G. says, the old in the end would give the best results?

Now, don't understand me as "butting" against improvements, for no one rejoices more over real improvements than I do; but if I am to rejoice, the thing offered must be an improvement when viewed from all of its many sides. Talk about handling hives instead of frames! The old hive, as given us by father Langstroth, with a movable bottom-board and no portico, can be handled just as you please after the bees have been in it (on this plan) one year; and yet how many of the bee-papers of to-day are recommending it as *the hive*? To be of real value, unless a radical change is necessary it is better to tell us how to secure the same results with what we now have, rather than advise something new to secure these same results. The "stone that keeps rolling gathers no moss." I may have been too severe in this, but I have felt for some time that we should call a halt, so I have written what I have. G. M. DOOLITTLE.

Borodino, N. Y.

*Concluded in next issue.*

[I am glad, friend D., that you have taken up the other side of the question; and whether or not we are "drifting from our moorings" your caution will not come amiss, especially to that class of bee-keepers who are over-enthusiastic. It were better, far better, that they stick to the old-fashioned things that have done good service than to waste their profits on new things. But, why go to either extreme? Is there not a golden mean somewhere here? You have done well with the fixtures you adopted in 1869; but this does not argue that you would not have done *better* with something else. Father Quinn by made bees pay, and pay *well*, with only *box* hives; but because he did so, would it have been better if *we* had never adopted the Lang-

stroth movable frame? Nay, verily. Father Quinby, yourself, and the rest promptly fell in with the new idea, because the new system offered advantages.

I will say right here, by way of parenthesis, for the benefit of our readers' private ear (not for Doolittle's), that our Borodino bee-keeper is systematic and careful, and, withal, a good financier; and I am quite sure he would have made almost any system—yes, almost any business—pay. Well, now, we are tending toward fixed frames as against the excellent loose frame given us by Langstroth. We, who are advocates of the former, hold that they save labor, and, to a greater or lesser extent, permit of handling hives more and frames less. In order to secure this latter feature, we who are of this school do not *all* advocate a radical change of hives. The Hoffman frames do not require the change of a single hive of the Langstroth type; and the change of frames should be made gradually. In most apiaries, new frames are by degrees added, and old ones are being replaced and the combs melted up. Why not, then, work in gradually the new frames—that is, if a test of a few justifies their further introduction? To get the principle of handling hives instead of frames, or, as I prefer it, "handling hives *more* and frames *less*," it is not necessary to work a revolution in hives. Even with the old loose frames it is possible to handle hives more and frames less than is usually practiced. I venture to say, you do not handle your frames now to the extent you did in 1869. But with the Hoffman frames the possibilities in this line are much greater. Try it and see. The very quotation you make from Gravenhorst was by him intended to prove the advantage of handling *hives* and not *frames*, as you seem to take it—at least, I so understand it. In another column I tell what I mean by handling frames less. I am now glad to give something that upholds points made by both of us.] E. R.

## FIXED DISTANCES AND FIXED FRAMES.

### HANDLING HIVES INSTEAD OF FRAMES.

I commenced bee-keeping in 1848, and followed it in just about the average way until 1861, when I was "born again" into apiarial life. I bought "Langstroth on the Honey-bee," and commenced work in real earnest; but I found that there was no way of spacing frames the proper distance apart except by the mere chance of guessing; and not being cast in the "good luck guess it good chance" mold, I began to experiment to find a better way; and, as a result, I invented the frame that I exhibited at the Keokuk convention, in the hive I gave Mrs. L. Harrison, and, so far as I know, I was the first person that ever made and used such frames. They had all the advantage of lateral movement, but can be quickly adjusted in fixed places, and are as easily moved and handled as your metal-cornered frames. They are cheap; take of necessity a thick top-bar; and hives made upon this plan, when properly constructed, have given universal satisfaction to all who have tried them for the last 30 years, and I have made, sold, and used thousands of them in this section of country. I tried to interest others in them, the senior editor among the number; but he said, "The bee-keeping brethren have decided that any kind of fixed distances is no good, and they are laid away to stay."

But eight or ten years ago the bee-keeping air grew hot with reversible frames, fixed frames, fixed distances, reversible hives, inter-

changeable hives, storifying hives, double-brood-chamber hives (the last of which, by the way, I had been using for 25 years or more), continuous - passageway hives, non-swarming hives; and so on without end, the bee-journals giving them all prominent notice; and I concluded that I knew nothing about good fixtures; that I was badly behind the times, and, to have any chance of winning the apiarian race, I must throw aside my old-fashioned scrub fixtures and cultivate the new traps. Now, I well knew that the use of a hive or two of any system gave the experimenter no chance of arriving at just conclusions; and having all the facilities for experimenting cheaply, first-class machinery, coupled with proper mechanical skill, I resolved to try things on a scale that would enable me to know what was what. Well, the first thing I did was to make 50 hives on the Heddon or closed-end-frame principle. When I had them completed I would handle the frames by the hour, and would think, "Well, this is just splendid;" and when swarming time came I filled the 50 hives with good early swarms, and obtained as good a yield of honey from them as from my old style of frames; and as I handled the frames but little that summer, all went well, and I made 50 more hives the following winter on the same plan. The next spring, on setting my bees out I found it necessary to examine the combs, as some swarms were dead, some queenless, some weak in bees; and I went to work, joyfully to handle the frames that were "easier to manipulate, and would kill far less bees, than the hanging frame." But the winter dampness had swelled the dry wood in frame and hive, and they came like pulling teeth; but, however, I got them out, and things arranged, but not without some curious thoughts creeping through my mind. After a time the bees increased in numbers, and the hives became overflowing with bees, just as they had to, to become profitable in gathering a large yield of white honey; and here again I found it necessary, in carrying out my plans, to open the hives and handle the frames. They had become dry by this time; and, while coming out easier than at the first trial, they stuck far tighter than I expected. But every inch of space was now crowded with bees; and when I tried to return a frame among that mass of bees, with all I could do with smoke and skill, what a crushing of bones! I filled the 50 new hives with bees that summer, with fair success as to honey; used them all the following season, and then the combs were all transferred to hanging frames, and I am entirely satisfied with the change.

I will say, before leaving this style of frame, that the hives in all their parts were constructed in the very best mechanical fashion. I had been using a half-closed-end frame, like the Hoffman, in my little shallow double-brood-chamber hives for years before I ever heard of Mr. Hoffman or his hive. They were only 4½ inches deep, and I seldom needed to handle single frames. They worked without just cause for complaint. But I was establishing out-apiaries, and what a splendid thing full-brood-chamber hives with the now famous Hoffman frame would be for hauling around! The engine was started, and some 500 hives, with the aforesaid frame, was immediately constructed in first-class fashion; and after they were all done I spent hours in handling the empty hives on my work-bench, and I said, "Well, this is just splendid." Each station was supplied with these new hives, and all swarms hived in them; but pretty soon Mr. D. W. Whitmore, who was very successfully managing one of the out-stations, said, "I do not like to handle the new frame as well as the

old wire-end kind. They take twice the time, and kill three times more bees." Mr. Whitmore's partnership with me has now terminated very satisfactorily by its limit of time expiring, and he is managing his own bees now. He recently said to me, "I want 50 hives in the flat, made for me on the old pattern of wire-end frames—that is the hive for me. I want no more Hoffman frames. They are a humbug compared with the old frame."

I used some 50 of these hives in the home yard. I do not say they are a very bad hive. They, like the entire closed-end frames, are nice to handle when the hives are empty, or contain but few bees, and are not swelled by dampness. I transferred all of my own this season to suspended frames, and am well satisfied with the change; and during this time I took the reversible-frame fever, and constructed 40 hives with a reversible frame constructed on the principle of my old wire-end frames. I filled them with bees, and they worked with entire satisfaction. The combs looked extremely nice, filling the frames tightly, top, bottom, and sides. But I soon found I could obtain no more surplus with them after a great deal of extra fussing and work; and after 2 years' use I drew the wire nails from one of their sides, and used them as I did my old-fashioned fixed frames; and I must say, before I quit, that I am now convinced that I do not want the combs fastened to the bottom-bars. The reason, I will not try to give here.

I tried several other styles of fixed frames on a smaller scale during this time, but have rejected them all.

Now, friend Root, I will send you, in connection with this report, a sample of an improved rabbet that I invented and now use in connection with common suspended frames. I do not ask for your opinion of it. I ask you to just let your boss workman take it and make one of your Dovetailed hives with that kind of rabbet; and after the frames are in you give it a good examination, and then set the frames, bees and all, from some good colony into it, and then give your opinion. I am pretty sure you will decide, after you have added my method of keeping just a bee-space on all sides of the hives on a plain bottom-board, and always keeping a proper bee-space between two or more hives tiered up for extracting or other use, that the Dovetailed hive is equal to any thing ever constructed for a full-brood-chamber hive, and, excepting the double-brood-chamber hive, I will say that I believe it will be the best hive in use for all purposes.

Now, I suppose the readers of this article would seem to be justified in saying that the man who had gone to all this expensive trouble, only to go back to old ways, is too old to appreciate new things, and deserves no consideration. But, friends, if you think I am not thoroughly alive to new ways and new things, just visit my apiary; and if you do not change your mind I will pay your expenses. In bee-keeping it may be truly said, "Old things have passed away, and, behold, all things have become new."

Before closing this article I wish to say to the honest, enthusiastic advocates of closed-end, Hoffman, and other fixed frames, that I regretted to write this on their account. But I did it believing what I have said to be true, and that it would do the general bee-keeping world much good. In the future even my little double hives will be made with the new rabbet and plain suspended frames.

B. TAYLOR.  
Forestville, Minn., Aug. 16.

[I will explain to our readers, that Mr. B. Taylor is the one who has used shallow brood-

chambers for some 20 years, though I believe on a different plan from that advocated by Mr. Heddon. He is a fine mechanic; and I should judge, from what I saw of him at the Keokuk convention, that he is somewhat given to experimenting, and testing all the new "fads." He has indeed been through the "mill" on fixed distances; and it seems after all that he is still in favor of them, although he does not agree with the other brethren on the exact form. The fixed frames he now advocates are ordinary loose frames, so arranged as to hang in notches in the rabbets. These notches are spaced equally distant. So far as my recollection goes, all sorts of spacing-devices in the rabbet have been unpopular, and have been discarded sooner or later. The trouble is, you have got to move two or three frames, or else roll the bees over and over in moving the frame that you wish to draw out.

Well, friend Taylor, from what I can gather from your article, the half-closed-end frames you speak of were quite different from those used by Mr. Hoffman. These frames, to give the most satisfactory results, should have the widened part of the end-bar V'd—that is, so that a knife edge comes in contact with a blunt edge, and then the top-bar should be widened so as to cover up the rabbet. Or, if this is not done, the frames should be compressed by a wedge, or, better, as I now think, with thumb-screws.

I notice that you speak of closed-end frames in a tight-fitting case sticking because of moisture. This is just the point I tried to illustrate in our last issue, and to which Mr. Hutchinson takes exception. I should like to have reports from those who have been using this class of frames, as to whether they have experienced any trouble such as friend T. and ourselves have had.]

### THE KING-BIRD A BEE-ENEMY INDEED.

#### FURTHER FACTS; DO KING-BIRDS REGURGITATE?

When I opened GLEANINGS for Aug. 15, and saw the pictures of the king-bird, in connection with J. W. Porter's article, it struck me as a coincidence that I had it in my mind for a week or two back to write to GLEANINGS and suggest that it would be to the interest of bee-keepers to open a war of extermination on these active little enemies of the apiary. I know that, in my neighborhood, they appear to be getting more common; and this, very likely, may be generally true. I shot some lately, and took from the gizzard of one the parts of as many as ten distinct bees or drones, and possibly the remains of more were there, but unrecognizable in their semi-digested state. There seemed to be nothing along with them save a few kernels of some berry as a digestive agent.

Now, on the assumption that this bird had two full meals of the kind per day, and that there are only twenty of them in my neighborhood consuming at the same rate, it means that they levy a tax on me of 2800 bees or drones per week, 11,200 per four weeks of the flying season, or probably the bulk of from one to two swarms per year, besides the honey immediately consumed in the bees taken.

They are very active on the wing, though favoring only short excursions, and not flying continuously like the swallow. Their favorite perch, when round the apiary, is on an uppermost or outmost twig of a tree. From thence they fly out and intercept their victims. At other times they may be seen flying along the

roadside, perching on fences, telegraph wires, tree or bush, as it comes handy. With their dark slate-colored back and wings and white under parts, they are easily distinguishable. When round our bee-yard they are quite alert, as though they were aware that they were after mischief and might be caught in it.

On one occasion, some years ago, I saw one, sitting on a wire clothes-line, attract a passing bee by a movement of its crest and head; and when the bee came within range the bird's bill was presented open, and the poor unfortunate taken in. I was just then starting with bees, and thought that a terrible enemy had come to close quarters, as the hives were only a few yards away from the spot, and I bethought me of my gun that it would be a necessary weapon of defense.

The beautiful bright orange feathers in the crest are so well concealed that people who have shot, or seen the bird when shot, are often quite astonished when they are pointed to them, as they had never noticed them before. One can spread them out so as to make them resemble a bright-colored flower.

Notwithstanding Mr. Porter's view to the contrary, I am inclined to think that, in the matter of regurgitation of food, Mr. T. L. Waite, as reported in the A B C, is right, and that the bird may do this thing—though for my part I couldn't easily stand by and give them time to do it. On the lid of a hive, some weeks ago, I found a ball of mashed-up bees which I can account for in no other way; and as proof that, early in life, they have a habit of this kind, I have been assured by the station-master, at the village where my bees are, and who had an excellent opportunity for observation, that he watched a nest with several young ones, and saw the mother bird repeatedly carry in food which she would put into the open mouth of one of them, while she would take something from the mouth of another and carry it a few feet away, usually dropping it on the station platform as she flew off again. He pointed out the substance to me, and asked me what it was. I told him that, as nearly as I could make out, it was bird droppings. He assured me that it came out of the little bird's bill, and, when I made light of the idea, he said he had watched closely, and was prepared to give his oath to that effect.

There are some things in nature that are almost too strange to credit when we are told of them; yet that these strange things happen, we sometimes get ample proof after.

R. W. McDONNELL.

Galt, Ont., Can., Aug. 29.

[Thanks for the additional facts which you give. In regard to the regurgitation matter, as given in the A B C of Bee Culture, we should like further testimony; i. e., do king-birds on occasion regurgitate vads of bees, as explained by the writer in the A B C, or is this all a hoax? In a multitude of testimony there is wisdom.]

## FRAMES.

J. A. GREEN HAS DECIDED TO ADOPT THE HALF-DEPTH CLOSED-END FRAME WITH A HOFFMAN TOP-BAR.

I have been greatly interested in the discussions over the frame question. I have adopted my frame, and have four or five thousand of them in use, and probably shall not change again very soon. Still, I like to hear the talk of those who are not yet out of the woods, and I hope that, from the combined experiments of the many who are just about to adopt some

form of fixed frame, something may be evolved better than any thing we have now.

Dr. Miller and Miss Wilson make very plain some of the reasons why fixed frames are superior to hanging frames; and when they come to use them more and learn the very many ways in which time and labor may be saved by their use, I shall expect them to grow still more enthusiastic over the subject.

It would seem, from what I have read, that the usual way of handling Hoffman frames is to set the frames loosely in the hives just as though they were hanging frames, and then crowd them up close together. When this is done a large number of bees must inevitably be crushed. My end-bars fit close for a little over five inches, and I very seldom kill any bees between them. The frames should always be kept tight together as far as possible, as they are set back into the hive. When I replace a frame in the hive I put the bottom of its ends against the ends of those in the hives, and slide it down, keeping the frames close together. No bees can get caught between the uprights, so none are crushed there. The only bees killed are the few that get caught between the ends of the top-bars as they come together, and between the top-bars and rabbet. With a little care, even this may be avoided. As the combs are straight, with no brace-combs between, bees are not hurt by being rolled between the comb surfaces, as so often happens with loose frames. If, for any reason, it is not best to put them together in this way, they may be put nearly down and brought nearly together, when a slight lateral vibration will make the bees get out of the way.

In order to slide frames together in this way so as to avoid catching bees, it is necessary that the end-bars be kept pressed tightly together in order that propolis may not accumulate between. I think you are wrong when you think that the wedge, or, what is far better, the screw, may be dispensed with. Some of my hives have been in use four years. The frames have been kept tightly screwed together, and there is practically no propolis between the end-bars. My nuclei are on three or four frames, in the regular hive. The frames are simply pushed up close together. Within two months so much propolis has accumulated between the end-bars that they are much more difficult to handle.

Dr. Miller wants a better bee-brush. Take a piece of broom-handle of convenient length. Saw a slit in the middle, a little longer than your frame is wide. Crowd this slit full of pieces of binding twine—rope raveled out will do, but is not so good—and then nail through with wire nails, clinching them. Trim the fiber off even, and you will have a brush that will take all the bees off a comb at one sweep, and that does not need to be renewed every day. This idea is not altogether original with me, but it's just as good as if it were.

Since one of Dr. Miller's "straws" has dragged my rose-bush into print, let me tell you that he hasn't told the whole truth. His information is old. The bush in question, which is a Bomsault climber, covering a space on the side of the house  $15\frac{1}{4} \times 17$  feet (you see I've just measured), has now 36 varieties of hybrid perpetual and tea-roses growing in it. As I write, 9 distinct varieties are in bloom, and it has borne a constant succession of the choicest roses all summer. The man who is not helped and made better by a love for and association with the beauties of nature is an anomaly.

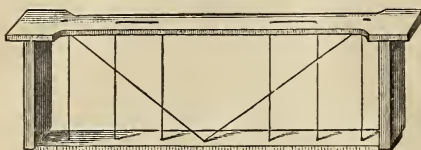
What about that "sure sign of swarming," quoted from the *Canadian Bee Journal*? Is the "raking" motion of bees on the alighting-board a sure indication that they will swarm

that day or the next? This is important, if true. But I am very sure it is not true.

Dayton, Ill., Aug. 24.

J. A. GREEN.

After receiving the communication we wrote friend Green, inquiring if the cut, which we here reproduce, was correct, and asking for more information on points suggested in his article. The nature of the questions will be readily understood from the reply, which is of so much interest we give place to it below, with the cut.



J. A. GREEN'S FIXED FRAME.

The engraving omits the central tin-bar, which is a necessity with a thin top-bar, and, in a sectional brood-chamber, the top-bar must be thin so as not to make too great a division in the brood-chamber. The brood-chamber is in two stories, and the frames are pressed together with screws as in the Heddon hive. The frames are much more easily handled than frames that fit close to the ends of the hive, while the hives may be just as readily handled. Bees may be shaken out, and, in fact, every thing in the way of "handling hives instead of frames" done with this hive as well as with any. The ends of the frames, fitting closely together  $\frac{3}{8}$  of an inch away from the end of the hive, form a double wall with dead-air space between, which is of considerable value for protection. By laying a sheet of enameled cloth over the frames, the bees are in a hive as tight as a box hive, and in the best possible shape for breeding up in the spring.

My hives are made with a shallow rabbet on the lower edges. By turning the hive over and putting the frames in from that side, the frames are flush with the top of the hive and the bee-space below. The hive may now be reversed as a whole, to get the frames solidly filled with comb, or for any other purpose for which inversion is desired. Screws can not be depended on to support the frames when inverted, so I use strips of heavy tin slipped between the ends of upper and lower stories. If it is desired to invert the lower story, it is pushed back a little on the bottom-board, which supports the back ends, and the front ends are held up by a strip of tin with two or three small blocks under the middle. Your Hoffman frames might be reversed in the same way. Inversion is seldom profitable except for getting the frames full of comb. For this purpose it is almost indispensable.

In the brood-chamber, 8 frames occupy a space 11 inches in width, measuring to the outside of frames, the hive being  $\frac{3}{8}$  inch wider. For extracting, 7 frames fill the same space. All transferring is done into extracting-frames. After these thick combs have been extracted from two or three times, the crookedest combs are straight.

I made my frames  $5\frac{1}{2}$  deep in order to use a lot of combs I had. If I were to start over again I would make them only 5 inches deep.

Dayton, Ill., Sept. 1.

J. A. GREEN.

[I have read your article with more than ordinary interest, perhaps because it is one of my hobbies. I fear that, if you don't change your mind, our friend C. P. Dadant will have to la-

bor with you on the undesirable features of fixed frames (see page 703).

I was not certain that compression was necessary with fixed frames; but that uncertainty, in the last few days, has changed to the conclusion that I want compression, and I am rather inclined to the belief that Manum's thumb-screws are the best for the purpose. As I have explained elsewhere, wedges do not give sufficient compression.

In handling Hoffman frames I use both methods of adjusting them to position; i. e., sliding them against each other as you explain, and crowding them up together. The proper use of the smoker just before closing them up will drive the bees all, or nearly all, out of the way.

I have practiced reversing the Hoffman frames this summer on the plan you describe, and I believe I have explained it somewhere in GLEANINGS. I agree with you that the chief object in reversing is to get well-filled-out, straight combs; and with all frames that admit of compression we can accomplish this very nicely.

You were right in deciding on a bee-space back of the end-bars. Full-depth closed-end frames without the bee-space have been any thing but satisfactory, on account of hitching in in withdrawing. If every thing is made perfect, and moisture doesn't interfere, they work well.]

#### RAMBLE NO. 45.

AT THE W. T. FALCONER MANUFACTURING CO'S.

After leaving Onondaga Co. we cross the outlets and catch views of nearly all of those beautiful lakes which make Central New York justly famous. The many thriving towns in their vicinity, and the tidy farmhouses thickly dotting the landscape, is an evidence of the fertility of the soil and of the thrift and prosperity of the occupants. These lakes, though separated from each other by only a few miles of land, have characteristics peculiarly their own. Seneca Lake is peculiar from the fact that it is very seldom frozen over. Like a large spring welling up from unknown depths, it is proof against the congealing effects of frost. Lake Keuka is also peculiar, from the fact that the influence of the water, and the contour of the surrounding country, make it a very paradise for the grape-grower, and over 40,000 acres of vineyards greet the eye as we float over its waters in one of the many pretty steamers in constant use. Whenever we ride upon these steamers upon any of our inland lakes, the price is much more per mile than railroad fare; but what was our surprise when charged the ridiculously low amount of 10 cents for a 22 mile ride! We felt just like spending a whole week riding back and forth. In consequence of these low rates, picnics and pleasure-parties of all kinds are on the lake every day; and even at these low rates the traffic is remunerative. In addition to passenger traffic there is much merchandise carried; and in autumn the boats are loaded to their utmost capacity with the luscious products of the vineyards. There are not many bees kept in this locality, and consequently there is not much conflict between the fruit-grower and the honey-producer; and the fruit-men with whom we conversed, we were happy to find, were enlightened enough to know that the sin of grape destruction is not altogether the fault of the bee.

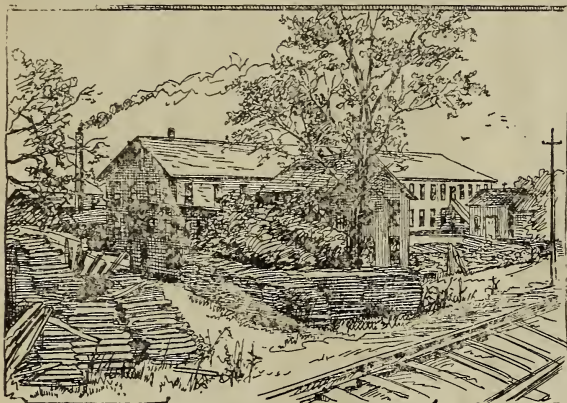
In the vicinity of the lake we found Mr. Beckwith, with 50 or 60 colonies of bees, but they were evidently not doing much, and his business of handling supplies was also suffering from the same cause. A drouth prevailed to

such an extent that the white-clover honey crop was an entire failure. Bee-keepers are not disposed to talk much about their pets when there is but little sign of business in the apiary, so we pursued the even tenor of our journey, which allowed us to pass over another of those beautiful New York lakes—the world-renowned Chautauqua. The thousands of readers and graduates of the Chautauqua Literary and Scientific Circle think of the assembly grounds located here as their *alma mater*, and to make at

wax cylinder, in a theater in New York. The machine was adjusted, and the Rambler was seated before it, with tubes inserted in his ears. The phone has to be run at a very even speed, and a little water-motor here supplies the power; but in many places electricity is more available, and is the motive power. Friend F. then touched the lever. We heard at first a gurgling sound, and a splash and a bang; and then a whole orchestra was playing in our ears. Then the song commenced, and it was reproduced perfectly. We arose from our first interview with the phonograph with a sort of awe-struck feeling, not only toward the invention and the inventor, but toward the age in which we live.

Mr. Falconer is not much of a bee-manager himself. His time is devoted to the mechanical productions, while his partner, Mr. D. E. Merrill, gives a portion of his time to the bees, and edits the *American Bee-keeper*, which seems to have a healthy circulation. The partner was away at the time of our call, engaged in seeing to the next issue of the *Bee-keeper*, which is printed in Jamestown.

We found here, as elsewhere upon our journey, a little complaint about the unfavorable outlook for the season, and which is usually felt at the supply-factory as the season advances. For the continued prosperity of the supply-dealer



W. T. FALCONER & CO.'S FACTORY, FROM A HAWKEYE PHOTO.

least one pilgrimage here while pursuing their course of studies. The city of Jamestown is very pleasantly located at the eastern end of the lake, and is known to all readers of bee-literature as the address of W. T. Falconer, the bee-hive manufacturer, though his home and factory are two miles away in the little village of Falconer. In 1876 the making of bee-hives was begun in a small way. In connection with a custom sawmill, and, we believe, a sash and blind factory. The bee-hive factory has increased from year to year. Several enlargements have been made, until Mr. F. has one of the largest plants in the Eastern States, and probably as large as any in the country in the special line of bee-hives and sections. The factory is equipped with fine machinery, and Mr. F. sustains a reputation for good work. His sections are made from seasoned lumber, and a stroll through his lumber-yard will convince any one that he is ready to meet the most urgent demand. The idea of working up such piles of lumber into sections gives one an idea of the number of bee-keepers and the extent of the business. Mr. F. thinks he can not make his sections smooth enough with a saw, so they are all run through a planer. The same care is exercised through all bee-hive work; and while many kinds of hives are made, the great run during the past two seasons has been upon the Dovetailed hive. At the time of our visit, a thin  $\frac{3}{4}$ -inch-walled Dovetailed hive was being constructed, over which a thin outside case would be used in the winter. The Rambler was much pleased with this hive, and believes it is an experiment in the right direction.

The tin department of the factory was rather light, as no smokers nor extractors were manufactured, but were kept in stock in great variety. The wax department was not very lively, but there were tons of wax ready to be worked into foundation.

In the office we were treated to a song from the phonograph. This song was taken on a



RAMBLER INTERVIEWS THE PHONOGRAPH.

and the honey-producer, may there be more bountiful honey seasons is the earnest wish of the

RAMBLER.

[The Hawkeye photograph of Falconer's place of business was not very clear, hence we had to use zinc etching. We should have preferred to give our readers a real view by the half-tone process. Our business transactions with the W. T. Falconer Co. have been the pleasantest; and we are glad to note that they have built up their business by square dealing and good goods. GLEANINGS wishes them more and greater prosperity, and a booming circulation to the *American Bee-keeper*, of which they are the publishers.]

### BEES AS FERTILIZERS.

READ AT THE ASSOCIATION FOR THE ADVANCEMENT OF AGRICULTURAL SCIENCE,  
WASHINGTON, D. C.

Darwin's memorable researches and generalizations in relation to the fertilization and cross-fertilization of plants, through the agency of insects, are not the least of his many valuable scientific discoveries, nor yet are they least in their bearings on economic questions. His classic investigations settled the question of the great value of insects in securing full fruitage to many of our most valuable fruits and vegetables. Since Darwin, many scientists have, by crucial tests and experiments, abundantly confirmed his conclusions. Our more intelligent practical men have also made significant observations. They note a scarcity of insect visits to the blossoms of the first crop of red clover, and also its failure to bear seed. The alsike clover is freely visited in early June by the honey-bee, and bears a full crop of seed. In New Zealand, the red clover failed to seed at all seasons, and there was a conspicuous absence of insects upon the blossoms, both early and late. This led to the importation of bumble-bees from England, to the earth's very limit, and now the New Zealand farmer produces clover seed. Gardeners keep bees to-day that their vegetables may fruit and seed more liberally. Even the producers of flower-seeds in our cities keep bees in their greenhouses, as they find this the easiest and cheapest method to secure that more perfect fertilization upon which their profits depend. Secretary Farnsworth, of the Ohio Horticultural Society, could account for a very meager crop of fruit a few years since, in his vicinity, after a profusion of bloom, only through lack of pollinization. The bees had nearly all died off the previous winter. I have often noted the fact, that, if we have rain and cold all during the fruit-bloom, as we did in the spring of 1890, even trees that bloom fully are almost sure to bear as sparingly.

Darwin's researches considered insects as a whole, and it is true that all insects that visit flowers, either for nectar or pollen, do valuable service in this work of pollinization. Thus many of the hymenoptera, diptera, and coleoptera, and not a few lepidoptera, are our ever ready helpers as pollinizers. Yet early in the season, in our northern latitudes, most insects are scarce. The severe winters so thin their numbers that we find barely one, whereas we will find hundreds in late summer and early autumn. In late summer the bumble-bees and paper-making wasps number scores to each colony, while in spring only the one fertile female will be found. This is less conspicuously true of solitary insects, like most of our native bees, and wasps; yet even these swarm in late summer, where they were solitary or scattering in the early spring. The honey-bees are a notable exception to this rule. They live over winter, so that even in early spring we may find ten or fifteen thousand in a single colony, in lieu of one solitary female, as seen in the nest of *bombus* or *vespa*. By actual count in time of fruit-bloom in May, I have found the bees twenty to one of all other insects upon the flowers; and on cool days, which are very common at this early season, I have known hundreds of bees on the fruit-blossoms, while I could not find a single other insect. Thus we see that the honey-bees are exceedingly important in the economy of vegetable growth and fruitage, especially of all such plants as blossom early in the season. We have all noticed how much more common our flowers are in au-

tumn than in spring time. In spring we hunt for the *claytonia*, the *trillium*, and the *erythronium*. In autumn we gather the asters and goldenrods by the armful, and they look up at us from every marsh, fence-corner, and common. In May *our* flowers demand a search, while in California the fields of January and February are one sea of blossoms. The mild California winters do not kill the insects. There a profusion of bloom will receive service from these so-called "marriage-priests," and a profusion of seed *will* greet the coming spring time. Thus our climate acts upon the insects, and the insects upon the flowers, and we understand why our peculiar flora was developed. Yet notwithstanding the admirable demonstrations of the great master Darwin, and the observations and practice of a few of our intelligent practical men, yet the great mass of our farmers are either ignorant or indifferent as to this matter, and so to the important practical considerations which wait upon it. This is very evident, as appears from the fact that many legislators the past winter, when called upon to protect the bees, urged that fruit-growers had interests as well as the bee-men, not seeming to know that one of the greatest of these interests rested with the very bees for which protection was asked.

Now that we understand the significance of the law of adaptation in reference to the progressive development of species, we easily understand why our introduced fruits that blossom early would find a lack of the "marriage-priests," and why it would be a matter of necessity to introduce the honey-bee, which, like the fruits, are not indigenous to our country, just as the bumble-bee must go with the red clover, if the latter is to succeed at once in far-off New Zealand.

It is true, that we have native apples, cherries, plums, etc. But these, like the early insects, were scattering, not massed in large orchards, and very likely the fruitage of these, before the introduction of the honey-bee, may have been scant and meager.

Now that spraying our fruit-trees with the arsenites, early in the spring, is known to be so profitable, and is coming and will continue to come more generally into use, and as such spraying is fatal to the bees if performed during the time of bloom, and not only fatal to the imago, but to the brood to which it is fed in the hive, it becomes a question of momentous importance that *all* should know that bees are valuable to the fruit-grower and the apiarist alike, and that the pomologist who poisons the bees is surely killing the goose that laid the golden egg. That bees are easily poisoned by applying spray to trees that bear nectar-secreting blossoms, at the time of bloom, can be easily demonstrated by any one in a very short period of time. It has been demonstrated in a frightfully expensive manner in several apiaries in various parts of the country. Several bee-keepers, whose all was invested in bees, have lost all this property, all because some fruit-growing neighbor either thoughtlessly or ignorantly sprayed his fruit-trees while in bloom; and this in the face of the fact that, for the best results, even in the direction sought, the spraying should be deferred until the blossoms fall. I have demonstrated this fact, where the results were entirely in sight. I have shut bees in a cage, and given them sweetened water, containing London purple in the proportion of one pound to 200 gallons of water, and in 24 hours the bees were all dead; while other bees, in precisely similar cages, and fed precisely the same food, with the poison omitted, lived for many days.

We thus see that it becomes very important

that pomologist and bee-keeper alike know the danger, and also know the loss to both parties in case caution is not observed to avoid the danger and probable loss. It is also important that, by definite experimentation, we may learn just how important the bees are in the pollination of plants. To determine this point, I tried many experiments last spring. I counted the blossoms on each of two branches, or plants, of apple, cherry, pear, strawberry, raspberry, and clover. One of these, in case of each fruit or each experiment, was surrounded by cheese-cloth just before the blossoms opened, and kept covered till the blossoms fell off. The apple, pear, and cherry, were covered May 4th, and uncovered May 25th and May 19th. The number of blossoms considered varied from 32, the smallest number, to 300, the largest. The trees were examined June 11th, to see what number of the fruit had set. The per cent of blossoms which developed on the covered trees was a little over 2, while almost 20 per cent of the uncovered blossoms had developed. Of the pears, not one of the covered developed, while 5 per cent of the uncovered developed fruit. Of the cherries, 3 per cent only of the covered developed, while 40 per cent of the uncovered blossoms set their fruit. The strawberries were covered May 18th, and uncovered June 16th. The number of blossoms in each experiment varied from 60 in the least to 212 in the greatest. In these cases, a box covered with cheese-cloth surrounded the plants. The plants were examined June 22d. Eleven per cent of the covered blossoms, and 17 per cent of the uncovered had developed. To show the details, in one case 60 blossoms were considered, 9 of which in the covered lot, and 27 in the uncovered, had developed. That is, three times as many flowers had set in the uncovered as in the covered. In another case of 212 blossoms, the fruit numbered 80 and 104. In a case of 123 blossoms, the number of fruit was 20 and 36.

These experiments agree with similar ones of former years, in seeming to show that strawberries are less affected than other fruit by the exclusion of insect visits. The raspberry canes were covered with cheese-cloth May 30, and uncovered July 6. In every case but one the canes seemed to have been injured by the covers, and so the results were not considered. In the exceptional case, 184 blossoms were considered; 93 blossoms developed on the covered canes, and 160 on the uncovered. In every case the fruit on the covered twigs was inferior. It might be thought that the simple presence of the covers was prejudicial; though this could not be a very important matter, as blossoms covered after the bees had freely visited them set well, and showed no injury. Thus we see that, in all our fruits—strawberries the least—the free visits of insects during the period of blooming is absolutely essential to a full or even a fair crop. In many cases the covered blossoms all failed to develop. We also see that, where fruitage does occur, there seems a lack, as the fruit lacks vigor. The free and ample cross-fertilization seems to be requisite, not only for a crop, but for a perfect development and maximum vigor.

Our experiments with clovers were tried with both the white and alsike. While the uncovered heads were full of seeds, the covered ones were entirely seedless. This fully explains the common experience of farmers with these plants.

Having the law of the necessity of insects to accomplish this function so well demonstrated, it might be asked, "Why do we have *any* fruit in case the blossoms are covered?" This seeming exception may be no exception. Indeed, this may come from the fact that *all* insects are not excluded. Very small insects, like the

thrips, and various of the jassidæ, which we know are often attracted to flowers, either by the pollen or nectar, would be concealed about the plants, and, from their small size, might gain access, even after the covers were adjusted. These would be sufficient to secure partial fertilization, and very likely are the cause of the meager crop which, in a few cases, we secured, even on the covered twigs.

In case of strawberries, our experiments this year, like some previously tried, seemed to show that the presence of insects, though important to a maximum production, are not so necessary as in case of nearly all other fruit. But we must remember that the strawberry-plants are not wholly inclosed. A cloth-covered box rests on the ground about the plant. This gives a fine chance for insects that burrow in the earth, and for insects that have pupated in like position, to come up during the three or four weeks of the experiment, and pollinize the blossoms. This, though a possible, and (shall I say?) a probable explanation, may not be the real one. But we can still affirm, in case of the strawberry, that the free visits of insects serve surely to much enlarge the production of fruit.

Thus we see that our horticulturists and farmers alike, with the apiarist, are dependent for the best prosperity on the presence and well-being of the bees. They should realize this fact, and should demand that our legislators not only become informed, but act accordingly. Agricultural College, Mich. A. J. Cook.

[We believe this paper to be the best, in point of definite facts, and most comprehensive, of any thing we have ever read. It is so valuable that every reader of this journal should peruse it carefully, that he may be able to talk intelligently to his farming and fruit-growing neighbors who unfortunately, in many cases, regard bees as a positive detriment to the proper maturing of fruit. Almost every year we come across farmers in the vicinity of our home apiary and out-yards who *persist* in saying that our bees are responsible for their trees not fruiting, and so this sort of ignorance is gaining currency in many localities, much to the detriment of the bee-keeper and the fruit-grower. This ignorance, and perhaps prejudice, should be dispelled by solid facts, such as Prof. Cook gives; and we hope our agricultural exchanges, and journals devoted to fruit-growing in particular, will give this paper of Prof. Cook's a wide circulation. We shall be glad, also, to send extra sample copies of this journal for bee-keepers to distribute among their neighbors who need a little "posting." That the good work may continue to go on, we have decided to make this article over into a leaflet for general distribution. To cover bare cost and postage, these leaflets will be sent to all who apply, for 5 cts. for 25; 10 cts. for 50; 25 cts. for 200; 60 cts. for 500, or \$1.00 per 1000, postpaid. Now let bee-keepers do a little missionary work for themselves and neighbors, and thus avoid, in some cases, these unpleasant clashing between the bees and the fruit.] E. R.

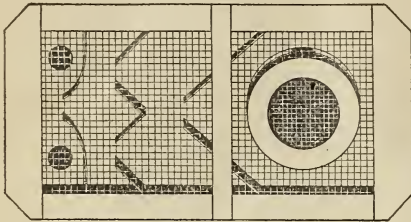
## THE NEW BEE-ESCAPES.

DIBBERN'S LATEST.

The cut will give a general idea of the new Dibbern bee-escape, and is the final result of a long series of experiments. It has stood the test of actual use on crowded hives in warm weather, and under difficult conditions.

This escape is entirely original with me—there is not a principle or idea copied from any other escape. I now claim this is the final complete success of my theory, that no "force"

or obstructions such as springs or trap-doors are necessary in a complete bee-escape. It is no labyrinth, but a system of plain passageways. The bees travel less than four inches from the entrance to the outlet of the escape, and they pass through much more rapidly than where obstructions are used. The body of the escape is made of one piece of tin, with proper holes for ventilation, and outlet of bees. The ventilator directly under the inlet also serves to draw the bees out of the super.



DIBBERN'S IMPROVED BEE-ESCAPE.

This escape is plain and simple. There is no delicate machinery to get out of fix, and bees do not find their way back through it, no matter how crowded the hive may be. All parts of the interior of the escape can be seen; and should any clogging ever occur, which is not likely, it can be easily cleaned by removing the middle strip and springing up the wire cloth, or removing it entirely. It can be readily replaced. This escape ventilates the super better than any other, and this point is of great importance in hot weather.

While I have given a great deal of time and study to perfecting what I call my principle, I have not overlooked what can be done with springs, traps, etc. Out of some half a dozen devices on this plan, I have produced a little escape only  $1\frac{1}{2} \times 4$  inches, that pleases me greatly. It is made on the flood-gate principle. The little gates are made of broom wire, in such a way that the bees from the hive side can not reach the hinges, and cause trouble by propolis. The great advantage in this escape is, that five or six bees can escape through it at once, and not a bee can get back. I do not see where there can be any trouble, and I have had a number in use for some time; but should the working parts ever become sticky, they can be readily cleaned by putting the escapes into boiling water. I have found this to be the most rapid escape I have ever tried, and have named it the "Little Giant." It is advertised in this number of *GLEANINGS*. In making my numerous experiments I have been greatly aided by the fact that I have a tin-shop, and can do ordinary tinner's work. I would get an idea of a device, and at once make it myself; and before night I would find out what the bees thought of it. In this way I soon knew whether an idea was practical or not, and what changes ought to be made.

The escape-boards may be made of any thickness from  $\frac{3}{8}$  to  $\frac{1}{2}$  inch. These boards make the very best covers for supers, and are also good covers for brood-chambers while in winter quarters. It is a good plan to have as many escape-boards as there are hives, with the holes for escapes all cut to a uniform size. These holes should be closed with little pieces of board, with tin on the upper side. Now, when a super is removed, when cleared of bees it is only necessary to exchange the escape for the wooden plug, and the bees need not be greatly disturbed. This plan will be found a great advantage over removing the boards every time a super is taken off.

Milan, Ill.

C. H. DIBBERN.

[We have tried the escape illustrated in the engraving. It does not seem to free the super as quick as the Porter. I suspect the reason is, that the bees sort o' get lost in getting out, though further trials may show different results.]

### BEES ON SHARES.

THE PRACTICE DEFENDED; FORM OF CONTRACT; HOW TO AVOID DISAGREEMENTS, ETC.

Other work taking nearly all of my time, I get only glimpses of GLEANINGS and the bee-world. I see that knotty problem, "bees on shares," is still a topic under discussion. You and I will disagree. The plan is a good one for both parties many times. A wants employment, and perhaps wants to build up his apiary. B has an apiary that he can not sell to advantage, and does not care to; yet health, or other business more profitable, prevents him from working bees himself. Why not one help the other? There has been but little time in eighteen years that I have not worked or let bees, ranging from a few colonies to whole apiaries; and to the best of my knowledge there has never been a bit of dissatisfaction. This is due, I think, to three points. 1. Give and take what experience has taught would *probably* be fair to both parties in that *locality*; 2. A fair understanding in the beginning, each party having a copy of the contract; 3. A knowledge of your man. I would not think of letting a man have my bees, of whom I had the least suspicion of dishonesty. I should also prefer to have them in the hands of a man who "makes haste slowly" in the way of new-fangled things. You let your bees for profit, not for experimental purposes. I should not like to take bees from one that had no knowledge of bees or conditions affecting the honey-flow. A poor season might be the cause of losing a good friend. In localities where there is always a good honey-flow, the danger in this direction would be greatly lessened.

The main points in my last contract are, A owns stock, B experience. B takes the stock (and in this case the fixtures on hand are loaned by A), furnishes the yard and tools necessary for working the same; does the work, and receives for his compensation half of surplus increase of stock, and half of any other profits arising therefrom, including the sale of queens, nuclei, wax, etc.. A and B to share equally the expense, except that of labor; settlement and division to be made on or after Oct. 1st of each year. Should A and B fail to agree on the division of stock it will be left to the decision of three disinterested persons, one of whom is selected by A, one by B, the two to select a third. The action of the "board" is to be final. Expense of arbitration is borne equally by A and B. B is to leave all colonies in good condition for winter, with not less than 25 lbs. of honey per colony. This is not to be construed to mean that, in case there is not sufficient natural stores gathered, B is to feed to make good the deficit.

What is the original stock to be returned? Is it the swarm issuing, the one remaining in the old hive, or an equal number in good condition? A and B usually use a different style of hive, hence it has been my practice to increase naturally, giving A the first, B the second, A the third, and so on, the old hive with the new queen remaining original stock.

I think an agreement of this kind, changed to suit different localities and conditions, can be made satisfactory to both parties.

Lima, Ohio, Aug. 28.

J. K. McCLURG.

[There, friend M., you have given us just the article we have been looking for. It is no doubt true that there are times and occasions when bees may be kept with profit on shares. Your form of contract seems to cover all or nearly all contingencies that are likely to arise; and although there have been a great many troubles and disagreements between the contracting parties, we believe it is mostly because of a lack of a good contract and a proper understanding. It is an excellent idea to agree to settle all disputes that may arise, by arbitration; and if both parties agree to abide in the first place on their decision, there ought to be no hard feelings left. As you suggest, different localities might require different forms of contract. For instance, in warm climates they have no winter troubles to contend with; and there can be no dispute or disagreement over serious losses of bees during winter as to who should stand the losses or who is responsible for said losses. In localities where there is usually a good flow of honey, it would not be a difficult matter to divide the proceeds; but in localities where the season is uncertain, one good year, say followed by two or three very poor ones, it is sometimes difficult to decide what are actual losses and what are actual profits.]

### MOVING BEES TO NEW HONEY-FIELDS.

HOW J. A. GREEN DOES IT.

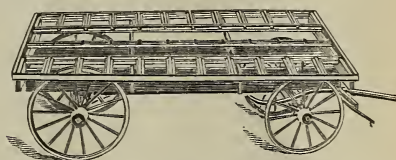
This is a time when many bee-keepers will find it to their interest to see if there is not some locality near at hand where there is a better prospect for a fall crop than there is at home. Every year's experience with out-apiaries makes me see more clearly the great difference there is in localities. Locations but a few miles apart may differ widely in both the quantity and quality of the honey they will yield. My Marseilles apiary is five miles southeast of the home apiary. Both are close to timber-fringed rivers running through a prairie country. My Wallace apiary, four miles west, is on the prairie, but within reach of the timber and river bottoms. There is a very perceptible difference in the yield at these places. Some experiments, tried several years ago, showed me that bees did better only a mile and a half away from the home apiary. These things convince me that bee-keepers might often, with comparatively little trouble or expense, largely increase their yield by moving their bees to more favorable locations.

With many of the hives in use it is a very laborious and somewhat risky job to move bees by wagon. But with the light, readily movable hives and fixed frames so rapidly coming into use, it is much simplified. With proper appliances and methods it becomes a very easy matter to load up an apiary and move it to a new location. Last fall I drove to an out-apiary, with one assistant. The hives were just as they had been during the honey-season. The bees were fastened into the hives, the parts of the hive securely fastened together, and the hives loaded on the wagon, ready to start back, in a time that was an average of just two minutes to each hive.

Bees may be moved very successfully on an ordinary hay-rack. Put boards in the middle to make it as nearly level on top as possible. On this load the hives, with the combs running crosswise of the wagon. Some put on part of a load of hay or straw, and set the bees on that. This is unnecessary unless the roads are very rough, or at a time when combs are brittle; and it is objectionable because it is difficult to set the hives on it so that they will be level and

will not swing and rock. It is this rocking motion more than sudden jars that does the mischief with hanging frames, and it must be avoided as far as possible.

My rack was made for hauling bees. It is raised high enough to clear the hind wheels, making it flat on top, as per cut.



J. A. GREEN'S WAGON AND RACK FOR MOVING BEES.

If I were to make another I would have running-gear made with the hind wheels the same size as those in front, so it would not have to be so high. The top is divided up so as to take four rows of hives, eleven in a row. Each hive fits into a compartment of its own, without touching other hives; and whenever hives are placed on the rack, no matter how few or how many, they will ride safely without any slipping about.

There is a box below as large as an ordinary wagon-box, in which other hives, or whatever is desired, may be hauled. Springs are not really necessary. I have hauled a great many bees over very rough roads, without springs, and without bad results; but this spring I came across some springs made by the Racine Economy Spring Co., to fit the ordinary farm-wagon, that proved to be just the thing. With them the rack rides almost as easily as a good buggy, and I should almost want them for my own comfort, if nothing else. They work well whether the rack is loaded or light.

For fastening the hives together I use the wire loop which I described before, and was illustrated by you. The more I use this the better I like it, and I use it for a great variety of purposes. For hauling hives and supers to and from out-apiaries I used loops long enough to fasten together four sections of my hive or five supers, making a package as easily handled as a single box.

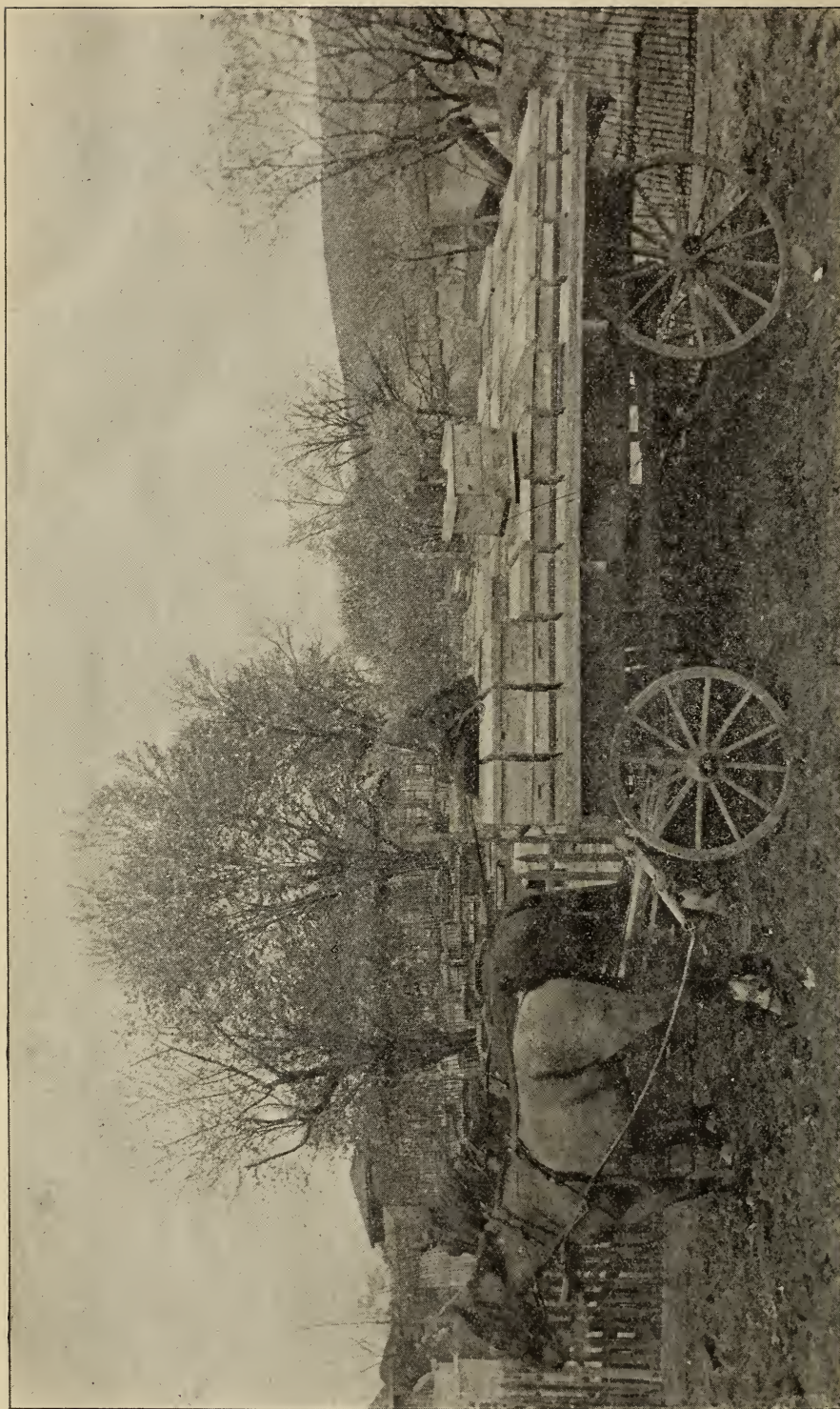
For fastening the bees in the hives I use a strip of lath. On one side the middle is cut out to correspond with the entrance. Over this is tacked a folded strip of wire cloth. The whole is fastened over the entrance by a couple of inch wire nails. In hot weather a frame covered with wire cloth takes the place of the cover. With these arrangements hives are very quickly prepared for moving, and two trips will move a good-sized apiary.

I send you photographs showing the rack empty, also loaded with bees. The large picture shows a load that had been wintered in the cellar just over the fence. The apiary and honey-house are in the background. The hive on top shows how the parts of the hive are fastened together. A light rope is run around the load, as a precaution against any possible jolting out of place.

J. A. GREEN.

Dayton, Ill., Aug. 25.

[Your article, friend G., is very timely, especially for those who will be hauling home their out-apiaries about this time of year. As we have just moved our Shane apiary to our home yard, over quite a hilly road, covering a distance of seven miles, I am in a position to appreciate and indorse almost every point you make above. We brought the apiary home in two loads. For the purpose of experiment, 27 colonies were put into our spring platform market-wagon for the first load; but as the



LOAD OF BEES READY TO START FOR AN OUT-APIARY.

colonies were all on Hoffman frames. I concluded we might just as well haul home the remainder of 57 in our lumber-wagon, with a hay-rack. We started for this second load about noon, in the midst of a light rain, from the Home of the Honey-bees, and arrived at the out-yard about half-past one. By this time the clouds had cleared away, and the sun was out bright and the air was full of bees. This did not strike me very favorably on alighting from the wagon. I told our teamster, Mr. Ward, we would try what we could to smoke the bees in; but after working about half an hour to no purpose, we concluded we would wait until it rained, or toward evening. I have heard the advice given, that bees will not fly if you smoke them; that the smoke would keep the remaining bees in the hive, and those returning would stay afterward. But it certainly did not work in this case. After waiting a couple of hours, a thunder-shower came up; and then we set to work in earnest, put the bees in, fastened the covers and bottoms, and laid the hives on the wagon. Two of us, in about an hour and a quarter, prepared 57 colonies in eight-frame Dovetailed hives, and set them on the wagon. This would make only about a minute and a quarter for each hive, after the rain set in, so we could close the bees in. We should have been enabled to do it in less time, but the rain poured down so furiously that we could hardly see to work, to say nothing of being dripping wet. Each hive had to be carried quite a distance around a building, under some low-spreading apple-trees, and finally we had to crawl over a rail fence before depositing them on the wagon. Now, if these bees had been on loose frames we should have spent all the afternoon, and more too, in getting the frames stuck up. As it was, we did not even open the hives. We used the same kind of entrance screen as you describe, exactly; and two wire nails held all securely in position. Last year I looped the cover and bottom with tarred twine; but this year I thought we would try using four wire nails instead. These were an inch and a half long, and were driven through the cover, one on each side, and two in the bottom, so that the heads just stuck out. The operation was very much shorter than I had supposed, and on arriving home the nails drew out very easily with a claw-hammer. As the frames were fixed—that is, Hoffman—in order to nail the bottom-board on all we had to do was to turn the hive on its side. Imagine, if you please, the fun of doing this with loose frames. But let me say, I drove no nails until the entrance screens were fastened. Then I had every thing my own way.

After the hives were all on, the load looked very much like that shown in your picture, only the hives were piled up two tiers high, in many cases. Add to this the fact that they weighed on an average from 60 to 75 pounds each, and you will get some idea of the extent of the load. As nearly as I can estimate, there was something over 3000 pounds weight, including bees, honey, and hives. To provide against any emergency I hitched a rope to the draw-pin of the doubletree, so that, in case any bees got out and made a rumpus, all we would have to do would be to draw the rope, drive the team away and leave the wagon standing. This hint I got from Mr. C. A. Hatch. As soon as we hitched on the big team, Mike, the bigger one, showed right away that he knew that bees were roaring behind him, and I feared he would not stand much in the way of stings. After we had got nicely started, to my horror I saw that the bees were getting out of one of the hives near the horses; and not only that, they had commenced stinging myself, and were

threatening the driver and horses. I quickly grabbed up a wet rubber coat and crammed it tight around the entrance, and with my hands I commenced smashing the bees that were in the air. It was now fast growing dark, and the heavy black clouds gave indications of rain; and an intensely dark night, with seven miles ahead of us, with very bad roads, and one or two railroad cuts that were any thing but easy to get over, were not very cheering. I felt considerably nervous, and employed myself in running on top of the load, inspecting the entrances as long as I could see, and then ran ahead of the team, so as to give the driver warning of bad places in the road. After we got over the worst places I mounted the wagon, and in about two hours' time we were home safe, with no mishap.

By this and other experiences I have learned some things, and they are quite in line with the points made by friend Green. In addition I will add a few other points. The first is, I would always have a rope attached to the draw-pin of the doubletree for emergency. Second, before putting the hives on the wagon, carefully inspect the wire cloth that closes the entrances. The time to fix up leaky entrances is *before* the hives are put on the wagon. Third, I would have a smoker already well lighted. In addition to this I would have two or three paddles. I would also have a wet rag, large enough in size to cover up an entrance. If you find the bees are escaping, tuck this around the edge of the wire cloth, where they are coming out, and then bring your smoker to bear. Fourth, I would have some extra rope, a hammer, and some nails; any or all of these we may need. We can not take too much precaution, for a single bee may cause a runaway and the almost complete demolition of all the hives on the wagon. Fifth, so far as practicable, draw the bees home by moonlight. After dark, even if some of the bees do escape from leaky entrances they will not be likely to sting horses or men. Experience shows this to be emphatically so in my experience. There is another advantage in night hauling; it is cool, and combs will not be liable to break down, and then on arriving home the entrance screens can be torn off and thus avoid that angry lot of bees during the day. By morning all will be quiet. One of our horses was very much afraid of bees, while the other would take four or five stings without making very much fuss. If you have a horse not much afraid of stings, you are lucky.

I have gone into details because the facts are fresh on my mind, and because they may come in good use to some who are about to move their bees home for winter.] E. R.

### FIXED FRAMES.

AFTER TRYING SEVERAL KINDS, SETTLES UPON  
A CLOSED-END HANGING FRAME WITH A  
BEE-SPACE BACK OF THE END-BARS.

I see Ernest has made the request that users of fixed frames give in their testimony, so here is mine.

Some twenty years ago I purchased the first fixed-frame hive I ever saw. It was called the "Hoosier" hive. The frames slid into notches, and were fixed and spaced in a very nearly permanent form. The hive contained a colony of bees at the time, and I removed the frames just once, then the combs and bees were transferred into L. frames without going through the bee-mashing ceremony of replacing them in those notches, and the hive went to the woodpile in a hurry; and, if I remember rightly, the criticisms regarding the hive and inventor were

more forcible than polite, for this was before the days of the smoker, and the bees were hybrids of a very warlike tribe. This was experience No. 1.

The next season we made a lot of American hives for an out-apiary, frames with a close-fitting top-bar the entire length, and slots for the bees to go up into the surplus apartment cut in them, and a movable side. This was better, but had many objections, and was discarded. Thus closed experience No. 2.

The next year I had charge of still another out-apiary, mostly on frames very much like the Van Dusen, only the corners were worked solid from the top-bar. This, the "Union" bee-hive, was so arranged that the frames could not be removed except from the side, or, rather, from the rear, and was a very inconvenient arrangement indeed in many respects—in fact, about *all* respects. This was experience No. 3, and I was then satisfied that father Langstroth was right, so I built my hives two-story, and confined my operations to the production of extracted honey with the L. frame.

A few years ago I changed to a frame a foot square, a swinging frame, being satisfied that, for the production of extracted honey and for winter, it was superior to a shallow frame as well as for brood-rearing.

#### METHOD OF GETTING BEES OUT OF EXTRACTING-CASES.

But here I ran against a snag with the Langstroth frame. I found it an easy matter, usually, to smoke the bees down from the upper story, and then pile up as many stories on top of one another as I conveniently could, and place a board on top of the pile, with a wire cone permitting the bees to leave the combs. They were then wheeled into the honey-house and extracted.

#### BEE-ESCAPE.

This cone was made from a patent fly-trap, and I sent a description of it to the old *Beekeepers' Magazine*, away back in the '70's; but for some reason it was not illustrated. But when I tried this same way with my deep frames I did not succeed as well, on account of the greater depth of frame.

#### THE FIXED FRAME I NOW USE.

I then, to remedy this defect, constructed a frame nearly six inches deep, twelve inches long, with  $\frac{3}{8}$  top and bottom bars and uprights,  $\frac{1}{8}$  wide, with usual bee-space between upright (or end-bar) and hive, top-bars resting in a rabbet, dummy at side, and set-screws to crowd all frames up close. At the side opposite the dummy the frames rest against a pair of little strips to keep them away from the side of the hive and preserve the correct spacing.

I made a large number of these little cases; and although, from past experience, I was very much opposed to fixed frames, and believed them impractical, I am more than pleased with the result of two seasons' use, and shall try them next year as a brood-frame. I can handle them by cases, pairs, and trios, with ease, and have no difficulty except with the comb-building nuisance between the cases, which will happen to a greater or lesser extent with any hive I have ever used yet. I also left the screws out of nearly half of these cases, and fastened the dummy with a key; but it does not fill the bill with me, as it is too slow and uncertain. My hive is, in many respects, like your Dove-tailed hive—cleated cover, and bee-spaced bottom-board; and all cases, supers, etc., interchangeable. When I adopted the closed-end frame I did not intend to try to handle them except by cases, and expect to handle them mostly in that way; but in my limited experience with this frame I find no trouble if you

only screw your frames up close and prevent the bees from sticking glue between the edges of the uprights, or end-bars. If usual care is taken in this there will be but little trouble; or such, at least, has been my experience, and I am surprised at the ease and rapidity with which I have been able to handle these little combs, and very often with less trouble than the larger ones. But I want a bee-space between the end of the frame and hive so far; and in case I wish to do away with it I can easily nail a thin board in at each end.

J. A. NASH.

Monroe, Ia., Aug. 25, 1891.

[You are correct in saying that fixed frames should be wedged or screwed tight. This is necessary in order to keep the bees from sticking the frames together with propolis. On some accounts I should prefer the wood screws. One objection to wedges inside of the hive is, that bees propolize them fast; and it sometimes, in the case of hybrids, takes no small amount of pulling to get it loose. The screws have the advantage, also, that more power may be applied.—I think you are also right in deciding that there should be a bee-space between the end-bars and the hive. I once, you may remember, thought that no bee-space would work better; but practice does not warrant this conclusion.]

E. R.

#### A FRIEND MALIGNED.

##### PROF. COOK STANDS UP IN DEFENSE.

Mr. J. S. Whittenburg writes as follows of an insect of which he desires the name:

"I send you a vicious insect which I have just killed. I could smell (?) the poison all over the house. What is the name of the thing? I shall call it the McKinley wasp until I hear from you. I tore off its head, and five minutes afterward it was still crawling around trying to spear things with its four-inch lance."

Mr. W. is much mistaken, as this is one of our largest ichneumon flies, and one of our best friends. The name is *Thallessa lunator*. It is a large wasp-like insect with a very long ovipositor, which it uses to bore into trees, that it may lay its eggs on or near the borers that are tunneling and destroying the trees. Thus this insect is very useful in destroying borers that otherwise would destroy our fine maples. Thus the insect is not only our friend, but is as harmless and safe to handle as a house-fly. I have handled them freely, many times, and never smelled the poison or received harm. This insect belongs to a very useful family of insects—the *Ichneumonidae*—all of which are parasites, and our very good friends, as they live on our insect enemies, which they destroy by the millions. They lay their eggs in, on, or near some grub, or caterpillar; and as the eggs hatch, the young of the ichneumon feeds on the luckless grub, etc.; and so, as we attempt to rear these latter, we rear the ichneumon instead. Were it not for these friends, agriculture, horticulture, etc., would be losing pursuits. All of these have large flat abdomens, and long ovipositors, and so are easily known. The ovipositor of this one is four inches long. This species, which is beautifully marked with yellow and brown, is very much like another species, *Thallessa atrata*, in form and size, but the latter is black. As these bore into trees they sometimes get their long auger fast. I have caught them thus entrapped several times.

Mr. W. calls this the McKinley wasp, and an enemy, or vicious thing. Is this suggestive that the "McKinley bill," so often defamed, may also prove our very good and helpful friend? Many very wise and good men think

it looks that way. We shall all see, as we are likely to have several years' trial.  
Agricultural College, Mich. A. J. COOK.

### SOME HINTS ABOUT CONVENTIONS.

DR. MILLER MAKES SOME EXCELLENT POINTS.

The secretary of a bee-keepers' society has asked me for some suggestions as to a program, and I will commence beyond the program.

One of the worst things is to have too large a place of meeting. In a large room it is difficult to hear all that is said, and more difference than might be supposed is caused by this. If effort must be made to catch all that is said, and even then some words be lost, the most zealous seeker after bee-truth becomes weary, and the meeting loses much of its interest. Better have a room so small that it is somewhat crowded than to have it uncomfortably large. And that word "uncomfortably" reminds me that a large room is likely to be uncomfortably cool during the first session. More than once I have entered the place of meeting, waiting for the opening of the first session, the room so cold that it was not even comfortable with an overcoat on, a score of people perhaps scattered in different parts of the room, looking at one another in a very formal manner, and I couldn't help feeling a little homesick. Put the same twenty people into a room twelve feet square, with a good warm fire, and how soon they would begin to talk and get acquainted! Make sure that it is *somebody's* business to have the room comfortable at the first session. And that doesn't mean merely that it shall be *warm* enough. The average porter on a railway car makes it hot for you, but you wish he wouldn't. It is of equal importance that the air be fit to breathe. A close, stifling atmosphere will smother the interest out of any convention.

In the larger places it is often possible to have the meetings in one of the rooms of a hotel. Indeed, I think it might be a good plan, even in a small place. It commends itself on the score of economy, comfort, and convenience.

There is a general tendency, in bee-keepers' conventions, to get disorderly in a certain way. A certain topic is up, perhaps the size of a hive, and, first thing you know, some one is talking about a new honey-plant. With the right one in control, I am inclined to believe that this sort of disorder is a good thing. Often very valuable points are brought out, and the discussion becomes intensely interesting, when the digression has gone so far as to leave entirely out of sight the topic which, according to the program, should be under discussion. It requires no little wisdom on the part of the presiding officer, however, to make the right kind of steering so that the whole concern does not become hopelessly demoralized. I do not know that it would be as safe with any other assemblage as with bee-keepers. But somehow they are such a good-natured lot, and withal so unselfishly eager to learn the truth, in spite of their general prejudices in favor of the things of their own "git up," that, no matter how far they are allowed to stray, whenever the lines are drawn on them they will good naturedly pull back into the track.

The fact is, the best, the most useful meetings are likely to be those where there is very little formality; and instead of being a formal meeting, it falls more into the character of a general conversation, only so that the line be strictly drawn not to allow more than one to speak at a time. It often helps greatly to have questions asked of the one who has the floor, and it is a

good plan to allow any one in the room to interrupt with a question, whenever it will bring out more clearly something that may be omitted by the one who has the floor. And I would not require the one asking such questions to rise or to address the chair. But the president must be closely on the watch; and whenever there is appearance of straying that brings no profit, he should bring the speakers back to the subject; and if there appears the least inclination to fall into offensive personalities, he should bring every one up sharply into parliamentary order.

It often happens that private conversations bring out items of interest—perhaps on the way to the convention, perhaps between the sessions. In this way facts may be had that would never be sent to any paper for publication. Possibly the one who has the facts does not himself recognize their value, or possibly he could not write them out so as to be understood. Indeed, there are cases in which nothing less than a series of questions will succeed. In such cases it is evident that what is valuable to the individual may be valuable to all, and it would be foolish to pass such things by because they had not been formally named on the program. But how shall a private member, who has picked up some item in the way I have indicated, manage to have it brought up before the convention? Just here is where the query-box comes in. A question can be asked about the item, or the president may be requested to ask Mr. Smith how it is that he managed his 125 colonies for comb honey without having a single swarm.

So you see there must be allowance made for these things, about which you can know nothing beforehand, and time left for them. Plenty of time certainly should be left for the query-box. One way in which the question-box is valuable is in giving each one the opportunity to ask specifically about the things he wants to know. It is true, that some one may ask some such question as, "Do the drones ever lay eggs?" but I have never seen any particular harm come from it, and such questions need take very little time for answer. But I have made my introduction so long that I must leave the program for another time.

C. C. MILLER.

Marengo, Illinois.

[I indorse particularly what you say in regard to conventions being held in a room adapted to the number in attendance. Once or twice our State and National associations have met in the chamber of the House of Representatives in the State capitol at Columbus, Ohio. The hundred or two hundred bee-keepers assembled seemed like a small squad huddled together in this immense hall. It was very difficult for certain speakers to be heard; and such rooms, although elegant in their appointments, are decidedly undesirable. I remember distinctly the difficulty I had in taking notes; and the report of several important things had to be omitted just because there was a word or two I could not catch, thus marring the whole.]

I somewhat question whether it is wise to let, here and there, bee-keepers digress from the subject under discussion. Our presidents do not always discriminate between that which is valuable and that which is not; and again, we do not all hold the right opinions on the useless and useful. You say, have good presidents who will discriminate. That is not always possible, considering the favoritism we have for our special friends in electing them to the position. A very successful bee-keeper might make a very poor president, and a very poor judge of good matter for discussion. You see, if a president discriminates in one case and not in an-

other, the feelings of some will be hurt. Why not treat all alike, and then leave valuable points, when they wedge in, to be reserved by the president, either for the question-box or the time when some subject will be discussed under a head where it properly belongs. We who report the proceedings of the bee-conventions must either give the report verbatim, giving all the connecting links, or else omit the irrelevant. It looks bad in a printed report to see, after a valuable paper on Controlling Swarms, the matter of comb foundation, wintering in cellars, and a whole lot of other things lugged in after the discussion, with here and there a sprinkling of the real matter under discussion. The reader can not, in the necessarily brief report, see the connecting links that brought in these other points. It is the report that does the greatest general good, and this report should be orderly and logical, and should show evidences that bee-keepers can meet together and discuss a subject without running off on a tangent.

I agree with you heartily, that there should not be too much formality or parliamentary stiffness. It is better to address the chair when arising to speak, especially if many are seeking the floor; but for ordinary questions or interjected sentences sprinkled in here and there, the formality of addressing the chair would spoil the continuity of the connecting links.

Yes, sir, there should be a question-box in every program, and plenty of space allotted for it. Some of the liveliest and most valuable discussions proceed from this, and right here is the place to bring in the valuable points that were or would be irrelevant elsewhere.] E. R.

## A BEE-HUNT WITH A SEQUEL.

CONCLUDED FROM PAGE 690.

The next morning after the bee-hunt I was hard at work under a large oak, in front of the apiary. Here I have my carpenter shop, blacksmith shop, tin-shop, paint-shop, etc. They are so located that I can see every hive in the apiary, as the ground rolls gently upward. These various shops are all in one large room, which has neither sides, ends, nor roof. I find that this kind of building is the least expensive of any, and I have the advantage of being able to see all around me. About 9 o'clock John came over, passed the house, and came on up to my bench. His brow was dark, and his countenance was lit up with fury. His great fist was clenched so tight that I could see the white ring around the edge of his forefinger and thumb. There was not a single soul on the ranch that day but myself.

"Good morning, John," said I in a hearty voice.

"You'll find it a'in't any good mornin' for you afore I'm done with you, for I'm goin' to mash you."

I am no coward. I have stood at the cannon's mouth—when nobody else was near—all alone. I am brave—as brave as the boy on the burning deck—brave as a sheep; but when I saw that great clenched fist, as big as one of the boulders with which they pave the streets of Native City, I was scared—scared all over. In the midst of my terror (I was only a little bit scared) I thought of Solomon saying, "A soft answer turneth away wrath."

Here let me digress from my narrative to say a word to the young men of the rising generation. You may not know, young man, that I have been a great benefactor to my fellow-men. At one time I donated fifty millions of dollars

for the good of mankind; at another time, thirty millions; and at still another time, twenty millions more—aggregating one hundred millions of dollars. I here donate to you ten millions more—in good, clean, cold-cut advice. This is the same form in which I gave all this immense sum of money! Here it is—listen to Solomon. He will be "a lamp to your feet and a light to your path." Put one of his proverbs in your pocket every morning. It will be better than a pistol to ward off danger, and protect you from harm. Chew it through the day instead of tobacco. Drink in its wisdom all day long, instead of guzzling beer. The dainty little letter that you carry next your heart is from the dearest girl in all the world. Just think of it! When she fumbles in your pockets—just for fun—and finds a proverb of Solomon instead of a chunk of tobacco, how her heart will roll out to you! When you "pop the question," that girl—with her Saratoga trunk packed full of new clothes—will hand herself over to you without any express charges or cash in advance. Listen to Solomon: "A soft answer turneth away wrath." So I said very softly to John, "Did your wife—did Martha send you over to smash me?"

"No, she didn't; and she would cry her eyes out if she knew it. I could no more hit you afore that woman than I could fly. But I've got you here, and I'll settle the case here. You had it made up aforehand with that colt and them bees to kick up that fuss. A feller that can go into a hive of bees and rake 'em round with his hands just as he pleases can do any thing with 'em. I don't know how you got round that colt, but you done it, and I'm goin' to pay you for it. I don't believe in no Prof. Cook, nor no Rutt. I believe you made up the hull thing aforehand to git us into trouble."

John made a grab for me, but I eluded him.

"John, just one word more. Do you remember how often I used to go over to your house and romp with the children—with little Nellie?"

I saw the great fist unclasp, and John's hand fell limp at his side. The tears were in his eyes. Little Nellie was then sleeping peacefully beneath the grass in the cemetery.

"Do you remember, John, how I used to spend an hour at a time in dancing her round the room, and she would lay her dear little curly head on my cheek and say, 'Mo-a! mo-a!' meaning more?" I had found the "soft answer that turneth away wrath," for the tears were now streaming down John's cheeks.

"Now, John, I have no defense to make. Strike! Strike, man! what's the matter with you?"

"What?" he cried, with his arms extended toward me. "strike a man that loved my little darling?—strike a man that nursed that dear head upon his bosom?—strike a man that kissed the dear lips that are now cold and silent in the grave? I was a fool—a beast—a brute. May God forgive me—I'll never forgive myself."

He grasped my hand, which I had reached out to him. "Come," he said, "you'll do no more work to-day. We'll go over and tell Martha, and I'll beg her pardon, and you'll be there to intercede for me."

O Solomon, Solomon! You were a great man—a wise counselor, a mighty king, a prophet! When you added that proverb to the brilliant galaxy of other sayings with which your name will ever be intimately and sacredly associated, you gave a star to the world that will never set—a jewel that will never be lost. You got me out of that scrape, without a broken bone or the loss of a single drop of blood. I was only a little bit scared, anyhow.

Sumac, Cal.

J. P. ISRAEL.

## LADIES' CONVERSAZIONE.

### REMINISCENCES OF THE WAR.

#### OVER SOME OF THE OLD BATTLE-GROUNDS.

We are just home from another Southern trip. Atlanta (nearly ruined in our late war) was our first stopping-place. From the Kimball House, where we stayed, we could see the State capitol building, a beautiful structure of Georgia granite and marble from the quarries near Atlanta. We were inside, but did not go to the top. Many nice churches are seen; and no one would think, to see the city now, that, at the close of the war, but four business houses were left standing; but so we were told.

We next stopped in Chattanooga, visited the National Cemetery, noticed Ohio's tribute to the memory of the "Andrews Raiders," which is a monument with a fac-simile in copper bronze of the old engine "General" above, and the names of the soldiers, twenty in number, who made the raid in 1862, underneath.

On Chicamauga battlefield is yet to be seen Bloody Pond, a small body of water where men and horses would crawl, wounded and dying, to quench their thirst, even after dead bodies had fallen into it. Three miles further on we find the wonderful Crawfish Spring. Oh such a depth of clear pure water, away down fifteen feet, and nothing to mar its beauty! From the row-boat we could look down and see wonderful mosses growing high, but away below us, and out of reach. A little pamphlet says: "This lake is two miles long, and is formed from the largest mountain spring in the world—sixty million gallons of the purest water flowing through it every twenty-four hours." We shall not forget Crawfish Springs any sooner than we will the hot springs of Arkansas, or Niagara.

In sight of this spring is Park Hotel, where we were introduced to General J. B. Wilder (of Wilder's brigade), who told us of many trying scenes during the battles in the surrounding country, and showed us where General Rosecrans had headquarters—a pretty place just back of this spring. After getting back to Chattanooga we took the inclined plane up Cameron Hill and back, and were in the old prison building where Confederate and Federal soldiers were confined, according to which side had possession of the city. We were under obligations to Mr. Piper, Rogers Bros., and their families, for a large amount of information about the country during the war, and our very pleasant time during our stay in Chattanooga.

A wonderful ride on the cars, fourteen miles up the mountain, brings us to Lookout Inn, a large hotel containing 650 rooms, 2200 feet above sea-level—a real pleasure-resort for people from Southern cities; and this pretty place is where the railroad traveling passenger agents of the United States and Canada held their annual meeting for 1891. While the men were holding a business meeting we followed a path from the hotel a short distance, leading to Point Park. Going through to the end we look down off the projecting rocks, and see another hotel, but no way to get to it. A path back a little way shows a rope tied round a stump, and dangling down over the rocks out of sight. Two of us decided to go down, and hung to the rope and let ourselves go, thinking it would bring us on a level with the hotel on the mountain-side; but we followed the path around and over the rocks, and soon came to another rope and old wooden ladder; but it landed us safe at the bottom. Then it com-

menced to rain; but we soon got to the hotel we had seen from the rocks above; and from the verandas we could see, in the trees below, chestnuts, redbirds flying around, and here we get the best view of Moccasin Bend, in the river below, and a good view of the city. But we were glad to get into a narrow-gauge car and ride, although the conductor says he can not take us to the inn, or in sight of it; but the remaining walk up the mountain is a short one, and we enjoy it and are soon safe in our room.

The next day a party of five went down on to this narrow-gauge track around the mountain, over trestlework, trees, rocks, and shrubbery, away below us, and followed on to the same hotel; but a railroad man was our pilot, so we did not fear a train coming. No wagon-road, no foot-path, no boat, no safe way to get there, only in cars, and—well, it makes me think of the dungeon at Fort Snelling; for isn't it prison-like to be where we can not walk away safely? Again we ride back, and climb the remainder of the mountain near where General Hooker's army came up, we are told. Not far from the inn is a war-relic museum. The proprietor kindly explained things of interest to us, and it is worth visiting. From the top of the inn there is nothing higher than we are in any direction. It is said we can see into seven different States here. One night we watched the sun set from the tower. A beautiful souvenir of wild flowers, gathered from the grounds whereon were fought the battles of Lookout Mountain, Missionary Ridge, and Chicamauga, was presented us before leaving; and now we bid our Southern friends good-by, and expect next to visit Mammoth Cave, Ky.

Medina, O.

MRS. HERMAN HOLMES.

[We would explain that Mrs. Holmes is a sister of A. I. Root, and has on a former occasion given an account of another trip over the L. & N., of which her husband is a general passenger agent.]

### MISS WILSON AND THE RECORD-BOOK, AGAIN.

#### THAT HUBBARD SECTION-PRESS, FOR WOMEN.

Now, see here, Mr. Root; I didn't think that of you. We just do lug about our big book, the same as ever. It is one of our biggest comforts. But the little memoranda on the sections are comforts too. The one has nothing to do with the other. You say, "Why not have a slate on top of the hive, or hanging on the hive, instead of being obliged to raise the cover, and then make a section unsalable by unsightly figuring?" But, Mr. Root, we have to raise the cover to see what the bees are doing, and we never care to see the memorandum unless we do uncover the super, while the book keeps the record of the colony, that we may want to see when we are miles away. It seems to me it is much more convenient and safe to have the memorandum on the section than on a slate. I should very much object to the figuring on the sections, if it had to stay there permanently. But just take a damp cloth, rub it over a cake of scourine a few times, and give your sections a few vigorous rubs, and see how like magic your pencil-marks will disappear. By the way, scourine is a capital thing to take propolis off your fingers.

If Mrs. E. M. Crossman will try Manum's swarm-catcher I think she will find it a great help in hiving her swarms. We clip our queens' wings, and only occasionally have to bother with swarms having virgin queens, but at such times we have found the catcher very handy.

Our bees have given us no surplus honey

since linden, although they have plenty of cucumbers to work on, and several acres of buckwheat are in easy reach of the Hastings apiary. I think a large part of our honey this year is linden. The white clover never was more abundant, the fields and the roadsides being perfectly white with it, and we had every prospect of a very large crop. Still, the honey came in quite slowly until linden bloom, when for a week or ten days the bees did a rushing business, then suddenly stopped. I really think we have very little clover honey. When I ask Dr. Miller about it, he says, "I don't know." Hereafter we have always thought there was so little linden that we have never counted much on it. I think there must be more of it than we know of. All the trees we saw were perfectly crowded with blossoms.

We feel very thankful that we have not been troubled with honey-dew.

Are we never to have any more large crops of honey from white clover? It looks a little that way; but, why?

I wonder how many of the ladies have a Hubbard section-press. It is splendid—just fun to feed in the pieces and see them come out nice, square sections, requiring very little outlay of strength. Charlie has nearly always made our sections, and I confess I rather dreaded the thought of having them to make this year. Dr. Miller sent for a Hubbard press. I had very little faith in its being a very great help, and was simply delighted with it on first trial. I quite enjoy making sections now. If any of the ladies have sections to make, and haven't a press, send for one right away. Don't you make another one by hand.

How many nice things we do have to make our work easy! I wish some one would invent a machine for scraping sections and getting them all ready for market—one that would work as nicely and easily as that section-press does.

Dr. Miller need not laugh any more at the ladies for discussing gloves and aprons. We have converted *him* to wearing aprons. When he gets to wearing gloves, I'll report.

Marengo, Ill.

EMMA WILSON.

["We" explained to A. I. R., that he in his footnote had misunderstood you, and that you had not discarded the get-lossable record-book. "Let it be as it is. It will do no harm," said he, "for it will draw her out a little more." And it has. Mr. J. F. McIntyre will have a very interesting article in our next, in its defense. Yes, that section-press is a very handy and satisfactory machine. The one who could not make it work, or would not be delighted with it, must be very stupid or very hard to please.]

## HEADS OF GRAIN

FROM DIFFERENT FIELDS.

SOME QUEENS; EXPERIMENTS AT THE AGRICULTURAL COLLEGE.

Without doubt the chilling of a queen, as told by Mr. Anderson, page 669, would in most cases destroy the spermatozoa; yet last spring, while removing the bees from the cellar here, I came upon a colony that was, as I supposed, dead, and I set it to one side. The next day I found the queen, while cleaning out the dead bees, and, to my surprise, she showed signs of life. I brought her in by the fire, got a cage with some bees, and in an hour she was as lively as if she had no memories of how near she had been to a death by freezing. The next day

I introduced her to a queenless colony, and today she is at the head of a strong colony of her own bees.

We have also a queen, very diminutive in size, that produces bees, many of which are much smaller than the normal. She was evidently reared under unfavorable circumstances, as she has laid only sparingly, and her brood is, much of it, drone brood. Her extremely small size, not only of abdomen but of thorax and head, makes her interesting, especially as she transmits this peculiarity to her offspring.

We also have a queen from C. W. Costellow, of Maine, from a mother whose colony perished of *Bacillus depilis*, as E. R. Root would have us say. She is structurally imperfect, as both anterior and posterior tarsi on one side are missing. Her bees are healthy, and a queen reared from her does not give the disease to her bees.

J. H. LARRABEE.

Agricultural College, Mich., Aug. 20.

[These experiments are interesting and valuable, and we hope Mr. Larrabee will tell us about his work oftener. This will greatly increase the usefulness of the apicultural station at the Michigan Agricultural College.]

### TO THE BEE-KEEPERS OF FLORIDA.

I am desirous of securing complete and reliable statistics of our industry for the past season. Will you kindly assist me in this work by forwarding me your name and address, also those of your neighbor bee-keepers, for a question-blank, to be filled out and returned? Blanks are printed on postal cards this year, for your convenience in returning. All responding will receive a copy of the complete report when published. I shall try to have it out by the 1st of November. A report of this kind will be very valuable to the fraternity, therefore I earnestly ask your assistance in making it complete.

A. F. BROWN.

Huntington, Fla., Aug. 25.

### ANOTHER SWARM-CATCHER A LA GOLDEN.

On page 663, Aug. 15, you ask for reports of those who have used swarm-catchers. I have one of my own invention, used in an apiary of 100 colonies, and I like it very much. I would not be without one or more of them. Mine is a little different from Mrs. Golden's. I use wire cloth, flat bottom, with tin slide, to fasten them in. I can stand it on end any place in the apiary.

I do not care if I do not get *all* of the swarm in. They will alight on the outside of the catcher; but I nearly always get them in. Then I can set it while catching, and leave to attend to others, if there are any to look after. They do not cling to the smooth bottom-board as they do to the wire cloth.

Cowden, Ill., Aug. 23. A. W. SPRACKLEN.

### SAD DEATH OF A BEE-KEEPER.

On the 26th of July my dear brother Willy, aged 26½ years, was drowned while bathing in the sea. A last effort by myself, swimming with him, was in vain. He warned me to go ashore to my family. I had only just time to arrive. Two sailors got hold of me, but Willy was lost. He was a bee-keeper since 1883, and was one of us five brothers (all bee-keepers), wide-awake in the business. Together with an elder brother he owned 240 hives, and got something above 20,000 lbs. of extracted honey. He came here from the Philistine plain to rest from his labors, as he put it, and he rests indeed. He departed this life in peace with everybody, widely beloved and deeply regretted by his friends and family. His career as a bee-

keeper was short but brilliant. He now rests in peace. His sorrowing brother,

PHI. J. BALDENSBERGER.

Jaffa, Syria, Aug. 10.

#### STANDING CLOSED FRAMES.

I have put all my new swarms this year on closed-end frames, and I am so well pleased that I will never put any more bees on the old swinging frames or any other frame that works in a tight box. I have handled bees for thirty years, and I am sure I never had any frame that killed fewer bees.

I put some hives in the sun and some in the shade, and left the winter cases on in the sun, and left them off in the shade. One comb melted down in the shade, while those in the sun have not. I used full sheets of foundation, and I have combs exactly alike, and are interchangeable without any trouble. Fixed distances for me from now on. J. F. MORROW.

Stromsburg, Neb.

[Closed-end frames are all right when made to stand on a bottom-board, *à la* Quinby and Hetherington; but it is questionable whether they will work in a closely fitting hive; i. e., no bee-space back of the end-bars. See page 699, Sept. 1st issue. We should rather account for the comb melting down in a shaded hive to some defect in putting in the foundation, or to small entrances.]

### SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LIKE TO RAISE CROPS.

#### WHAT WE CAN PLANT DURING THE LAST OF SEPTEMBER; BY A. I. ROOT.

Well, we can plant spinach; and as it is a difficult matter to get good strong heads, just before the frost hinders them from running up to seed I would advise making several plantings. Last winter and spring we could have sold barrels and barrels of spinach at tremendous prices had we only planted enough of it. During severe freezing weather without snow, it is very liable to be injured during the spring; but we have never succeeded very well with any kind of mulching. Evergreen boughs, where they can be procured, have been highly recommended, and I should think they would be about the thing. Perhaps some coarse mulching like tomato-vines, bean-stalks, etc., might answer nearly as well. The idea is, to get something that will make the snow bank around the plants, and keep them frozen, or, if you choose, to prevent so much freezing and thawing. The American Pearl onion-sets can also be planted any time this month. By the way, it seems a little singular that no seedsmen besides Johnson & Stokes have discovered that many kinds of onion-sets may be planted out in the fall. We have also been told through our agricultural papers for years, that onion-sets of the hardier kinds can be put out in the fall as well as in the spring. I suspect it must be a matter largely of soil and locality. *Egyptian* onion-sets, of course, succeed everywhere. In fact, I never heard of a failure. And, by the way, as we are sold out, perhaps it would be a good thing for somebody to advertise both top sets and bottom sets. Oh, yes! there is one more thing that we can sow in September, October, and November, or, in fact, any time in the fall when the ground is not frozen. It is winter rye. And I think it will pay market-gardeners exceedingly well to get in rye just as fast as they can get off a crop of any kind. It will hold the ground together, prevent wash-

ing, prevent the manure from getting away; and the ground will be dry quicker, and be sooner ready to plow, where your rye is than where it is left bare. Add to all this the value of the fertilizing material of a heavy crop of rye plowed under. In the spring, plow the rye under just as fast as you need the ground, and *no faster*.

#### SPINACH FOR POULTRY; A CAUTION AND A SUGGESTION.

If you keep poultry, and they find your spinach, good-by to at least a portion of it. And this reminds me that, if you have vacant ground near their quarters, it will pay well to sow a good long strip purposely for them. Then give them a strip of rye, and if you have any old cabbage seed you do not care much for, sow that for them, and the same with lettuce. A good generous feed of lettuce at a time when the fowls have been somewhat short of green food will often of *itself* start them to laying briskly.

#### CABBAGE, LETTUCE, CAULIFLOWER, ETC., FOR COLD-FRAMES.

Now is the time to sow seeds of the above to get plants to put out in your cold-frames a month later. By the way, if you can afford the sash and the handling of it, it is the nicest way in the world to raise spinach and be sure that the frost does not injure it. The rest of this space I have left for one of our gardeners to fill, as the doctor does not allow me to dictate or write much.

#### OUR GARDEN, SEPT. 10.

Come down across the creek and railroad, and see the strawberry garden. The long rows, about three feet wide, are a dense mass of foliage; the leaves of the old plants in the middle a dark brown; the young plants on the sides bright green, and all just reveling in the soft rich soil. It is enough to arouse an enthusiastic love for nature in any one who can see beauty at all. Who can help admiring the bright beautiful things, fresh from the Father's hand? The American Pearl onions are down here too. They are just coming up; and the long straight rows reach from the west fence away down to the old railroad. The little white throats, showing above the dark soil and under the green tops, assure us that we can depend on them to help furnish us with *money*, and that means *work* to keep all the boys busy. The blackberries on the side hill don't seem to "weary in well-doing," though their time for fruit is long past. While there are not enough to send many of them on "the wagon," we do get enough to delight Mr. Root's eyes and help make him hungry. Then down in the corner by the railroad is the tomato-patch where we are testing the different kinds that the many friends have sent us to try.

Henderson's new No. 400 that has no name yet is the only one which has attracted any attention so far. Its color is pink, like the old Mikado, and it is an immensely large tomato. I picked one this afternoon that weighed a pound and eleven ounces. This was not one of the largest by any means; but it was one of the smoothest and most *meaty*, or thickest—that is, through the tomato from the stem to the blossom end. It is quite solid, also, but has more seeds than the Ignotum, and does not ripen well down around the stem.

Our people think that the Shoepeg corn is about the richest and best corn we have ever had. It is not very early, and does not have very large ears; but there are two, three, and sometimes four of them on every stalk, even when the stalks are only three or four inches apart in the row. We have tried the new

scheme of cutting off the tassels, as fast as they appear, on every other row of our sweet corn this year; and, so far as it is possible to judge from one year's experience, it pays well. There are many more *fully* developed ears on the trimmed rows than on those that are not.

We are selling the first of the Spanish King onions on the wagon these days. The boys get five cents a pound for them, and they weigh from one to two pounds apiece—five or ten cents for an onion raised right here at home!

Well, friends, we have not been all over the place, but I guess this is enough so that you will know we are here and at your service.

## OUR HOMES.

He that is faithful in that which is least is faithful also in much.—LUKE 16:10.

Well, dear friends, here I am again, just where you found me before. I am free from fever, free from pain of any kind, and my mind seems more clear and vigorous that it has before for months. But our good friend the doctor is vehement in objecting to my dictating one of my usual Home and neighborly talks; therefore I have selected a chapter from a Sunday-school book that has recently interested me greatly. The title is "Cecil's Knight," published by Thomas Y. Crowell & Co., New York. Perhaps I had better explain to you that the good lady who takes such a prominent part in the story, and has so many proverbs and old sayings at her tongue's end, has been christened in her own neighborhood "Aunt Solomon." If the story is not by Uncle Amos it has his most emphatic indorsement, for it is a better story (in his opinion) than any thing he ever has written or ever will write in that line. I have taken the liberty of giving it a heading myself.

THE BOY WHO WAS DETERMINED TO HAVE AN EDUCATION, AND WHO WAS ANXIOUS AND WILLING TO WORK FOR IT.

"There's somebody knocking, Sophy! You will have to go to the door. If I go, whoever it is will stand there and talk till noon. I dare say it is a book-agent, or a man selling notions. It's 'in for a penny, in for a pound,' when they get hold of one. Tell 'em I've got every thing in the world that I want, and haven't a cent to buy any thing more, nor a minute to spend talking about it. There, he's knocking again! Don't stop to prink any longer, you foolish girl! What do you suppose he will care how you look? 'All horses are the same color to a blind man.' Do hurry!"

Sophy hurried, according to orders, while she was within reach of her mother's eyes; but she stopped on the stairs to pull down her sleeves, and glanced at the looking-glass, as she went through the sitting-room, to satisfy herself that her hair was in order.

"If it's a book-agent, I don't mind," she said to herself; "but if it's somebody else, I don't care to look like a Hottentot!"

"It's a boy who wants to see you," she said, coming back to her mother presently.

"I'll warrant it," Mrs. Marten said impatiently. "If ever I'm up to my elbows in suds, or have turned the house out of the windows for spring cleaning, some one is sure to call; but if I happen to be dressed up in my Sunday

best, with nothing to do but to hold my hands, not even a tin-peddler comes near me. I'm sure I haven't a minute to waste on any boy to-day. What does he want of me? Why didn't you ask him? However, 'a short horse is soon curried.' I'll be back in two minutes. 'What the fool does in the end, the wise man does in the beginning.' Where did you leave your boy?"

"Standing at the south door. He wouldn't come in," Sophy said, getting upon a chair to take down a picture, and dusting it energetically.

Mrs. Marten had been putting down her sleeves while she talked, from force of habit, but she recollected that it was only a boy, before she untied her apron.

She found the south door closed, and her caller standing on the step outside. She gave him a nod by way of greeting, and waited for him to declare his business.

He looked at her; what he saw was a tall woman, with a sensible face, and a pair of keen eyes; she was dressed in a neat, dark print, which was carefully pinned up, and covered with a huge apron, while a brown barege veil was tied over her hair, as a substitute for a sweeping-cap. The ends of it floated out on each side of her head, as she stood in the breeze at the door, giving an odd suggestion of wings in the wrong place.

She looked at him; what she saw was a fairly well-grown, strongly built boy of fifteen, with black curly hair and bright eyes. He was neatly dressed as far as spotless cleanliness went; but her quick eyes noted that the sleeves of his worn jacket had been pieced out at the wrist, and patched at the elbow, and even a piece of cloth of a different shade had repaired some damage on one shoulder; while his trousers were too short, and the shoes had evidently seen their best days.

A glance had shown her these things, and in the same instant she summed up the items. "The amount of it is," she decided mentally, "he's as poor as Job's cat, but he's got a good mother. He's as tidy as can be, only he's grown out of every thing."

He lifted his straw hat respectfully.

"Good-morning, Mrs. Marten," he said. "My name is Louis Thorne. Last night I heard that you wanted some one to work for you, and I should like to get the place."

"You?" she said, in surprise. "Oh! I wanted a man."

"Well, I'm a *young* man!" he returned, pleasantly, seeming in no wise discouraged. "And I think I'm as strong as some older men are, and as tall as some others. Couldn't you forget my age—I am growing older every day!—and let me try?"

He straightened himself a little, to look as tall as possible, and his frank, pleasant manner spoke strongly for him.

"You may be as big, but I should be reminded soon enough that you are nothing but a boy," Mrs. Marten said, shaking her head. "You are strong enough, as far as that goes; but 'old heads don't grow on young shoulders,' and you would be a care instead of a help. There are boys enough about the house now. I should never be sure that Dandy had any thing to eat unless I looked in his manger."

"Only try me," Louis urged. "I'll promise you he shall always have his dinner before I have my own."

"Oh, there's no use talking," she said impatiently, thinking of her suspended work. "I'm sure I don't know what I'm wasting my time with you here for. I've got plenty else to do with every minute of it. I ought to have told you in the first place that, though I did say

I wanted to hire somebody a week ago, I've changed my mind since, and am going to do without. I might find an odd job for you now and then, if you don't get steady work," she added, noticing the shadow that fell over his bright face. "If you were only a girl now, you would be just what I want. Haven't you got a sister who wants work?"

"No, ma'am; Freda is sick," he said. "But I know how to do girls' work, Mrs. Marten! I really do. I have always helped my mother about the house, and she says sometimes that I am as good as a girl! She would give me a recommendation for housework, I know. Do let me try. I am sure I could do it."

"You ridiculous boy!" Mrs. Marten responded, laughing heartily. "A minute ago you were sure you could do a man's work, and now you think you can do a girl's. I should like to see you at it!"

"I shall be very glad to let you see me, if you will give me the chance," he said, joining in her laugh. "I don't pretend that I can sew, though I suppose I could learn to do that on a pinch. It can't be any thing very hard. But I know that I can sweep, and help about the washing, and cook some things; for I have often done it. I don't say that I like that kind of work, but I can do it, when I can't get the kind that I do like. Indeed, Mrs. Marten, I am in earnest," he said, growing grave again. "Since we moved here I have tried everywhere to get work, and I can't find any. This seems to be my last chance, and I want very much to get it, because my mother has no one but me to help her, and instead of helping I am only a burden. It seems a shame that a great strong fellow like me should not be able to support himself. So I will do any honest work. I don't care what it is."

"I believe you, my boy," Mrs. Marten said, with unwonted kindness. "But you don't realize how unpleasant this would be. It is vacation now; but school begins next week, and some of the Academy boys board with me. You would not want to do such work after they came. You don't know how they would torment you."

"But I should do it all the same, whether I wanted to or not," he returned. "I've learned that lesson. If the boys want to amuse themselves, I suppose they can; but it will be an old story before long, and I shan't let them keep me from any work I can get. I will do *any thing*, except to steal or to beg."

Mrs. Marten wavered a little. Thrift hinted that the combination of man-and-maid-servant, though unusual, would be very convenient; compassion whispered that he needed the place; her womanly nature was attracted by his frank speech and pleasant face, no less than by his resolute spirit. He saw her hesitation, and pressed his advantage.

"Suppose you were to take me on trial for a day or two," he suggested. "Then you could tell whether I was likely to be worth my salt."

"Well," she said at last, "it's a queer thing to do, but I may be sorry if I don't do it. 'Some refuse roast meat, and afterward long for the smoke of it.' I believe I will try you as you say. What wages do you want?"

"Something to eat, and whatever you think I earn," he answered.

"Well, that's fair," she said. "'When two ride the same horse one must ride behind;' but if I am both buyer and seller, I'll see that you are not cheated. When will you come?"

"Oh! I *have* come," he said gayly. His spirits had gone up with a bound. "I can stay now if you like. Mother will know that I have found work."

"Very well. Then come upstairs," she said,

pleased with his promptness. "We are cleaning house, and I can't waste any more time, if I am going to get through before those boys come back again."

He followed her upstairs, and she presented him to the much-astonished Sophy.

"Here's Bridget's successor," she said. "I hope he will be an improvement on her. There's room enough for it. Oh, you have got all the books and pictures out and cleared the room. That's a good beginning. Where's the tack-hammer? This carpet is to come up, Louis."

He set to work at once, drew out the tacks, folded the carpet, carried it into the yard, and began cleaning it in a most satisfactory way. Sophy seized the opportunity of his absence to shower questions about him upon her mother, who was quite unable to answer most of them.

"But I never heard of such a thing!" Sophy said, when she had learned all she could. "He only thinks of the work; and I dare say he can do that, for if his face tells the truth, he has ten times Bridget's sense; but I don't believe he has counted on the rest of it. When Jim Burton finds out that he is doing girl's work, he won't give him much peace. I can't say that I should want to stand in his shoes!"

"Well, 'a laugh breaks no bones,'" Mrs. Marten said, with much composure. "I guess we won't disturb ourselves about it. 'Our worst misfortunes are those that never happen.' Louis looks wide awake, and I have an impression that he can take care of himself. I told him about the boys, but he did not seem frightened about them. I shan't be surprised if he gives Jim Burton as good as he sends. I've taken a fancy to him."

"But you know nothing about him," Sophy said.

"Not a thing," her mother assented, "except just what my own eyes and ears have told me. I shall trust their testimony for the present. The boy's face speaks for him. If he doesn't suit us we shall be no worse off than we were before, and he may be real good help. 'The proof of the pudding is in the eating.'"

"He has a pleasant face," Sophy admitted, looking out of the window which gave a view of the yard, and the new help at his work, "and I believe he is smart. Do see how he goes at that carpet! Doesn't he make the dust fly! If he isn't striking twelve now, he'll be a treasure."

"Mustn't expect too much," Mrs. Marten said.

"He's nothing but a boy, and I don't suppose he is perfect. 'He who wants a horse without a fault may go afoot.' But I like the spirit he showed; he was ready to take what he could get, if he could not get what he liked. That's the kind of boy that succeeds in the world. He can try it a while, and I'll be on the lookout to find a place with more suitable work for him. But I wish those boys would just let him alone."

"They won't then," Sophy said, shaking her head. "It will be nuts to them, you may depend."

"And if I try to caution them, it will only be 'showing the cat the way to the cream,'" Mrs. Marten said. "We shall have to let him fight his own battles for any thing I see. 'Every fox has to take care of his own tail.' But boys are unfeeling creatures sometimes, and I am afraid he won't lie on a bed of roses."

They worked silently considering this point, until Louis appeared, with a flushed face, and said:

"I think the carpet is clean, Mrs. Marten. What comes next?"

"Can you wash windows?" she asked, looking round the room.

"I should think so," he answered. "At least

I can follow directions. Where shall I find my tools?"

She gave him his "tools" and his directions, ending with, "Take care of the corners."

"That sounds natural," he said, setting to work; "for my mother always looked at the corners to see if the room was clean, after I had swept it."

"That shows that she is a sensible woman," Mrs. Marten said, appreciating that bit of housewifely wisdom.

"You would think so if you knew her," Louis replied, rubbing the glass vigorously, by way of emphasis, until it shone again. "She's just the best mother a boy ever had!"

"If you said a girl," Sophy interposed. "I should have something to say, because that would be *my* mother!"

"Nonsense," Mrs. Marten said, though she looked pleased. "But it's just as well that you should think so. 'Every mother's child is handsome,' and, by the same rule, I suppose every child's mother is good. I should like to see your mother, Louis. Have you only that sick sister you spoke of?"

"Only Freda," he answered.

"What an odd name!" said Sophy.

"Do you think so?" he returned. "She was named Winifred, after my mother, but father always called mother Winnie, and the two Winnies made a confusion, so we gave Freda the other end of the name."

There was a little change in his voice when he spoke of his father; and Mrs. Marten noticing it refrained from asking the question about him which was on the tip of her tongue, and changed it to an inquiry about Freda's health.

"I don't know whether you would call her sick," Louis said doubtfully. "She doesn't take much medicine now, and she eats like other people; but she hurt her back some months ago, and the doctors said she must not try to sit up for at least a year, so she has to stay in bed."

"Oh, poor child!" said Sophy. "How hard that must be! How did you happen to come here? Did you have friends here?"

"Oh, no," he answered; "we knew no one; but a friend of ours knew Mr. Howarth, and got a place for mother to work with him, and I was glad to come, because of the Academy. We hired that tiny cottage next Mr. Prince's, on Woodland Street, very cheap, and I hoped to find a place where I could get work, and perhaps go to school part of the day. But I very soon found that I should have to drop the school idea, and I began to fear the rest must follow it; for I couldn't find anybody who would take me at any price until I came to you, and I was getting pretty well discouraged."

"Oh, well, I wouldn't do that. 'A stout heart breaks ill-luck,' you know," kind-hearted Mrs. Marten said. "It is true that boys are more plentiful than places, at this time of year, but we'll be on the watch. 'All comes round to him who can wait,' and something will turn up for you, never fear."

"Thank you," he said, with evident sincerity. "I know there's never any use in getting blue, and I don't often do it; but things did look rather dark this morning, and I didn't know where to turn next. I'm all right now."

"Then perhaps you would like something to eat by and by," she said. "Sophy can finish here, while we get dinner."

Sophy made a comical face, and Louis smiled.

"You have no faith in my powers, just because I am a boy," he said; "but you will see! Aren't my windows as bright as your Bridget would have made them? I have—oh, let me carry that!" he broke off, catching a pail of water from Mrs. Marten's hand.

They went down stairs, and he speedily showed that he had not overstated his own abilities. He put the fire in order, filled the kettles with water, prepared the vegetables, laid the table, and, in fact, did every thing that she had been accustomed to expect from her servant girl, and did it all with a deft readiness which contrasted strongly with the style of service which Bridget had been wont to render. His mistress's heart was won long before dinner was ready.

"No, I like to cook my own meat," she said, when he proposed to broil the steak. "Then if it isn't all right, there's no one to blame but myself; but I don't doubt that you could do it. I had no idea that a boy could be good for so much in the house."

"Well, you see a boy has to learn, when his mother needs his help," Louis replied. "He has to be both son and daughter sometimes. Shall I feed Dandy now? I'm interested in his having his dinner, since mine depends on his."

"I declare, I had forgotten him!" she said. "Yes; I will show you the way," and she took him out to Dandy's quarters.

The barn was connected with the house by a long low woodshed.

"So that we can get there without going outdoors," she explained. "It comes handy in winter and wet weather."

She introduced him to Dandy, whose looks certainly did not justify his name, and Louis tried in vain to find something complimentary to say about him. He was too much accustomed to Brown Bess's graceful head and glossy coat to be able to admire Dandy.

"He seems to know you," he said, for the horse whinnied eagerly when he saw his mistress, and began to paw, as if connecting her presence with the idea of dinner.

"Good old fellow!" she said, patting him, and supplying him with two or three apples, which he ate from her hand. "I don't need a horse any more than a robin needs a ladder, but I can't make up my mind to sell Dandy, because my husband raised him and was so fond of him. I shall depend on your taking good care of him, Louis."

She showed him how to feed him, and explained his other duties, and then they went back to dinner, to which Louis was ready to do full justice.

The afternoon was as full of work as the morning had been. He wiped the dishes which Sophy washed, and learned where their places were; he swept the kitchen, blacked the stove, and mopped the floor; he put down the carpet and took another one up, and was ready with his help whenever it was needed; and through it all Mrs. Marten watched him with growing satisfaction.

The day's work was done at last, even the milking, though Mrs. Marten's more skillful hands had to come to his aid to accomplish that. He filled the wood-box, and brought in a basket of chips, in readiness for the morning fire, without waiting to be told to do it; and Mrs. Marten told him how to "set a sponge" for the breakfast rolls.

Then he said, "If there is nothing more to do to-night, may I go home for an hour?"

"Certainly," Mrs. Marten said. "I am going to make you an offer, and you will want to consult your mother about it. You have proved that you are worth your salt, and a potato to eat with it. 'Where the will is ready the feet are light.' If you choose to stay, I will keep you until we can find you a better place. If you still want to go to school, I will give you your board for what you can do out of school hours; or, for all your time, I will give

you the wages that I gave Bridget—two dollars a week."

A flood of color came to Louis' face.

"To school!" he said, with shining eyes. "Oh, it won't take long to decide which I choose! I never will lose courage again; I will always think that God will bring things right at last. Only this morning that school looked as far out of my reach as the Kohinoor diamond, and I did want it so much!"

"When the tale of bricks is doubled, Moses comes," Mrs. Marten said. "I have faith in a boy who will dig with a spoon when he can not get a shovel, and I'm glad to help him. But about the school, you must see what your mother says. She may not agree with you. Stop a minute,"—for he had caught up his hat. "Tell your mother that I shall want you here nights to be ready for work in the morning, but you can run home every evening for a call, if you choose. You have done Bridget's work to-day, and some of a man's besides, and you may like to take your pay home. Here it is."

He looked at the silver she pushed toward him, but did not put out his hand.

"Have I *earned* that?" he asked doubtfully.

"Why, certainly, you silly boy! It isn't charity, if that is what you are afraid of," she said, laughing. "It is your pay for to-day. Didn't I tell you that you had earned it?"

He took it then, with thanks.

The glow of pleasure was still on his face when he reached home, and his mother greeted him with—

"Successful at last, my boy, I'm sure!"

"I knew it before I saw you," said Freda.

"You did not come slowly, slowly along the road. You were walking fast, and I heard you whistling 'Yankee Doodle,' so I knew."

"Yes, I've got a place at last," he said.

And now, friends, for the moral. Some of you may ask, "Was there ever just such a boy?" or, perhaps, what is of more importance, "*Are there any such boys nowadays?*" Thank God, there are both boys and girls, and men and women of much the same stamp, although, perhaps, the character in the story as given above is somewhat an ideal one. I do not know that I ever saw one single boy who possessed all these virtues. I have seen, however, a great many who possessed more or less of the same virtues. How I *should* love to tell you about some of them! But space (and the doctor) forbids. I would say this, however: I have been among such people for more than forty years of my life. I have seen them grow into important positions, and positions of sacred trust. Perhaps I should tell you that the hero of the story above *did* work his way—yes, *fought* his way, inch by inch at times, through the *academy*, next through *college*; and before he died he was *governor of the State* in which he lived.

And now for the moral, dear reader. It is this: When *you* meet such a one, eager and hungry for work, give him a chance. Give him a brief *trial*, at least; and when the great and final day shall come, then the Judge of all the earth will say to you, "Come, ye blessed of my Father, inherit the kingdom prepared for you from the foundation of the world. . . . For I was a stranger" (and without work) "and ye took me in."



Be not forgetful to entertain strangers; for thereby some have entertained angels unawares.—HKB. 13: 2.

This issue seems to be largely devoted to a discussion of the advantages and disadvantages of loose and fixed frames. Discussions on this topic will be in order for two or three issues more. Now that there have been hundreds of bee-keepers all over the land who have been testing some form of fixed frame, it is fitting that we compare notes and so avoid expensive mistakes and blunders. In other words, we do not want to get into that unhappy condition spoken of by friend Doolittle, where a bee-keeper wasted all his substance in useless experimenting.

On page 728, current issue, J. A. Green doubts the statement made by some, that the raking motion on the part of the bees in front of their entrances is prognostic of swarming. We have observed this scraping or raking, hundreds of times, and it usually, with us, occurs some three or four weeks *after* the honey season is closed, and swarming ceased. Almost any time during the latter part of July and all of August we can find a good many of our colonies doing this "washboard act;" and yet, so far as we can discover, it means nothing. The bees at the entrance evidently have nothing to do, and think they must clean off the paint from the alighting-board, as the paint to *them* is foreign.

OUR Shane yard, when brought home, was set out on the S. E. Miller plan (see page 524, GLEANINGS for 1890, or the last edition of the A B C), in groups of five each, so arranged that there would be an alleyway for the bees and one for the apiarist. It looked well to us in the first place on paper, and it works well in practice. As the hives in individual groups are only 14 inches apart, there is a handy seat for working over each hive, and the tools are within easy range of the whole five hives. Where apiaries are arranged with a single hive in a location, there is a great deal of traveling from hive to hive, and a lugging of all the tools. On the plan of five in a group, lugging has to be done only once for every five hives.

A. I. ROOT, JUST BEFORE GOING TO PRESS.

WELL, friends, I am in the office once more; but I do not stay very long, and do not go very often. The doctor forbids it. I have to-day, Sept. 15th, for the first time been down to the creek-bottom garden. It seems wonderful that so great changes could be made in the growing season, in just a little over four weeks. Parker Earle strawberries, set out after my sickness (with transplanting-tubes), are now great strong plants sending out vigorous runners on either side. American Pearl onion-sets, planted at the same time, are now several inches high, making a perfect stand of long green rows. It seems good to get around and look over this wonderful world once more. But I have had a little sad experience in the way of getting well too fast; so, good-by for the present.

LOOK OUT FOR HIM!

WE received the letter below from friend Dandant some little time ago, as you will notice. As it is always our custom to give even a rascal a hearing, we wrote him at once, asking him what he had to say for himself; but by some carelessness of our own he was not promptly

published after a considerable time had elapsed with no reply. We trust, however, he has not succeeded in getting any thing from other bee-keepers meanwhile.

*Friend Root:*—Will you please advertise Mahlon Taylor, of Columbus, Ohio, as a swindler? You may give our name as authority. He buys honey and does not pay for it. He is so much more to be feared, because he refers, as you will see by his letter-heads, "to any house in the city," and has been connected with some honorable men in the same place. We are the losers of about \$50.00 on his account, owing to his former connections.

Hamilton, Ill., Mar. 31, 1891. DADANT & SON.

#### INSURE YOUR HONEY AND HONEY-HOUSE.

A FEW days ago we received an appeal in behalf of a bee-keeper who had lost his honey-house, and its contents of several thousand pounds of honey, by fire. The building was not insured; and the friend of the one who lost the property desired us to put in a notice, requesting bee-keepers to help our brother in trouble by contributions, the same to be deposited at the Home of the Honey-bees, and by us forwarded to the party direct. We wrote to the friend that this would be impossible, and that, when a bee-keeper was so improvident as not to have his property insured, he would have to stand the loss. A honey-house and contents can be insured for a trifling sum; and even if you never suffer loss by fire, you can, perhaps, go to bed and sleep a little easier. A house does not need shingling when it does not rain, and a building does not need to be insured if there is to be no fire; but we do have rains, and we do have fires, and it is wise to be on the safe side.

#### BEE-PARALYSIS AND THE SALT CURE.

MR. ALLEY says, in the *Apiculturist*, that bee-paralysis (*bacillus depilis*) can not be cured by changing the queen, and wonders how much longer this sort of advice will be given. He pronounces the salt cure to be sure, and that many readers of the *Apiculturist* have reported success with it. Salt is known to be a mild antiseptic, and it is possible that salt water, or syrup strong of salt, might have the desired effect. We shall test it at our earliest opportunity, and in the meantime we should like to have reports from those who have tried it. We do know that the removal of the queen has, in all cases that have appeared in our apiary, cured the disease, thus showing that the trouble in our case is an inherited one. Cheshire, we believe, found the bacilli in the ovaries of the queen. By the way, something more ought to be known concerning this disease. The reports of its appearance in various apiaries all over the country rather go to show that it is on the increase; and although it is a mild disease compared with foul brood, it should receive our careful attention.

#### GOOD OR BAD PROPOLIZERS—WHICH?

DR. MILLER, in *Stray Straws*, pokes fun at us in one or two places. First, he can not quite reconcile the statement we made editorially, that the Punic bees are *bad* propolizers, while the introducer of the same bees quotes them as *good* propolizers. Why, doctor, we both mean the same thing. When bees deposit propolis to an excess, it is disagreeable and bad for the bee-keeper; therefore we said they are *bad* propolizers, just as we would say they are bad stingers, although "a Hallamshire Bee-keeper" might call such *good* stingers. The English language is unfortunate in having so much elasticity. You may remember the story of the Frenchman who, while on a tour through this country, was told to "look out" while he had

his head sticking out of the window, meaning that he should *pull it in*; and on another occasion he was told to "look out," meaning that he was to put his head through the window and view some sight. It is said that he complained, after getting his head severely bumped, because of the ambiguity of *our* language. Doctor, we didn't think that of you. You are *bad* for poking fun, even if the Hallamshire chap should insist that you are *good* at it.

#### DEATH FROM A SINGLE BEE-STING.

A CASE of fatal stinging is going the rounds of the Eastern press. It seems that a young man, Wm. H. Danley, was stung on the finger. He complained of excruciating pain, and his hand commenced swelling. In a few minutes his whole system was affected. The report goes on to say, that, "only ten minutes after being stung, he fell into a comatose condition; and before aid could be summoned he was dead, only fifteen minutes having elapsed from the time he was stung. The physicians expressed a belief that the sting entered a nerve or blood-vessel, and the poison was carried to the vital organs, causing almost instant paralysis." It is no doubt true, that the young man was very susceptible to the influence of bee-poison, otherwise the sting could not have killed him, even if it *had* entered a nerve or blood-vessel. We can not deny the fact that, in rare cases, there are persons whose death is liable to occur in a few minutes after being stung, unless medical aid is at once summoned; but these cases are so very rare that they give no reason for alarm. Almost every one who has to do with horses is liable to be kicked or run away with, and yet this liability does not cause any fear in handling them.

#### HOW TO KEEP BEES AWAY FROM THE CANDY-STANDS AT COUNTY FAIRS AND OTHER PLACES.

ALMOST every fall we have trouble by our bees visiting the candy and popcorn stands during the days of our county fair. As the grounds are right in sight of our home yard, the bees, especially during a dearth of honey, are quite apt to make themselves disagreeably free at these stands. Several times we have been threatened with a suit for damages, although we have done all we could to keep the bees at home, and have offered to make good all damages. This year we provided several wire-cloth paddles, *a la* Doolittle. These paddles, as made by Mr. Doolittle, are small enough to go into a hip pocket; the center is cut out, and covered with wire cloth. The object of the wire cloth is to permit the air to pass through the paddle, so as not to fan the bees away. Doolittle's were made of wood, but ours are made entirely of metal, the wire cloth being supported and held in position by one wire loop, and the hole around the edges securely bound with tin. Well, we supplied each one of these candy-stands with the aforesaid paddles, and requested the proprietors to kill the very first bee that hovered around his goods, adding that, if they allowed a single bee to get away with a single load, she would bring back a dozen others; and these dozen others, if still allowed to escape, would increase the number of visiting bees proportionally. We impressed this latter fact upon their minds, and then told them that, if they hadn't time to kill the bees themselves, we would employ small boys to do it for them. They thanked us for the information, and told us they thought they could manage the thing themselves, and they did. Whenever a stray bee appeared, either they or their clerks killed it promptly; and the result was, that all the candy-stands were free from the

nuisance of bees. An ordinary observer would have said that not a single bee made its appearance during the two days. The whole secret lies in not letting the bees have a start.

**HANDLING HIVES MORE AND FRAMES LESS;  
HOW TO PRODUCE A TON OF HONEY FOR  
LESS MONEY AND LABOR.**

ON page 727 of the current issue we promised to say something further on this subject. The older a bee-keeper grows in experience, the more he will handle hives rather than frames; and especially so when his colonies increase to such an extent that they have gone beyond his individual care, and there is a prospect that hired labor has got to come in and assist. To illustrate what we mean, we will give a few manipulations that are, perhaps, to a greater or lesser extent practiced by the more or less advanced bee-keepers.

At an out-apiary it is seldom necessary to hunt the queen to see whether the colony is queenless or not. The pulling-out of a single comb, with eggs and brood in all stages, will show pretty well the condition of a hive. "But," you say, "how are you going to know about the other combs?" A single comb drawn from the center of the hive will, to a practiced bee-keeper, pretty accurately tell the condition of all the other combs with reference to brood. If it is well filled, and has brood in all stages, the inference is pretty strong that at least four or five other frames have brood in, to a greater or lesser extent, depending on the season of year, and whether the queen is a young or old one, which the record should show. If it is in the fall of the year and there is only a small patch of brood in the comb from the center of the brood-nest, very little or no brood may be expected in the other combs. For experiment, in the last few weeks we have been diagnosing colonies as to the extent of their brood in just this way, and then verifying the result by looking at every comb. We seldom missed our guess.

A practical bee-keeper will tell, when first lifting a cover, almost unerringly whether a colony is queenless, by the behavior of the bees. For the benefit of beginners we will say that queenless bees have a sort of nervous hum, which can be very readily learned after it has been heard a few times; and this nervous hum, while by no means infallible, is tolerably safe to go by, especially with Italians. Sometimes hybrids and blacks, more particularly the latter, will hum just from mere disturbance, even when they are not queenless. In going through our out-apiaries when time is limited, we very often lift off only the cover. If the bees appear quiet, and seem to be populous in numbers, we replace the cover after blowing a little smoke down between two or three of the frames, to see how the brood-combs look. Some three weeks ago we went through the whole Shane yard in just about this way, and removed the frames from only eight or ten colonies, which we found to be queenless, one of them having fertile workers. These we supplied with unsealed larvæ or queen-cells. A few days ago, to prove whether our former diagnosis had been true or not, we looked carefully through the whole apiary, and found by the record on each hive that we had not in a single instance misinterpreted the condition of the hive. Bees will sometimes hum when they have a virgin queen; but an examination of a single comb will probably reveal the presence of one or two cells that have been gnawed into in a way that indicates that a virgin queen has recently been thereabouts. We say "recently" advisedly, because in three or four days more, these cells will have a very different appearance, the bees

having smoothed them over the ragged edges of the cell. We seldom look for a virgin queen; and about the time we expect her to be laying, we look for eggs, but not for the queen. If she happens to be on the first comb we pull out, all well and good; otherwise, if we see the eggs laid regularly, and the frame pretty well filled on both sides we infer she will continue in this sort of business until she has gone over six or seven combs, depending on the season of the year, and whether honey is coming in slowly or not. If the virgin is lost during the wedding-flight, the bees are pretty apt to make the fact known by a peculiar hum; then we give a cell. If she is not lost the cell will do no harm.

The amount of stores in a colony can largely be told by hefting the hive, or, at least, by pulling out the two outside frames and blowing smoke down through the rest so you can look down between the frames. During the work-season you can tell what colonies are doing well and are prosperous, largely by the entrances. These things are familiar to veterans.

So far the handling of hives more and frames less applies equally to both loose and fixed frames. Where fixed frames give us an advantage on the subject of handling hives more and frames less is, that we can pick up two, three, or four frames at a time. This is specially advantageous in forming nuclei; and if we do not have very much time we do not wait to see which half the queen is in. The slate is put in a certain position on the cover; then in about 24 hours we go round and lift the covers and wait for the hum. If not satisfied we pull out one of the combs and look for initial cells. The queenless hive is then supplied with a caged queen, according to the diagnosis.

There is one feature that seems to be peculiar to the Hoffman frame; and that is, when it is necessary to pull a frame out it is not required to finger over four or five to get room for the one to be removed. Draw out the division-board, crowd over from the center three or four frames just next to the one you wish to remove. This will leave nearly two inches of room in which to move the frame in question, and there is no needless rolling-over of bees. You can examine as many frames as you like, either in pairs or singly, replace any, and, with one or two shoves with a screwdriver, push them all to their place, and all are equally distant. But, as I have before said, smoke must be blown down between the uprights before this shoving-over is made.

In giving room to colonies, we have frequently picked up four frames of foundation out of a hive, carried them just as they were, and set them down in their place, without even disturbing their position. Thus the four can be banded in the time that one could be on the old loose plan. Again, the fixed frames do not have to be fussed with; i. e., stuck up for shipping or moving.

It can very often be determined whether a colony needs more super room by the flight of the bees at the entrance. We found, by examining into all such hives as we thought needed more room, that our entrance diagnosis was not far from right. Now, the fact is, we want to learn to do as little work as possible in handling frames, and as much as possible in diagnosing hives.

We have given only a few of the many ways in which a colony may be diagnosed on the scheme of handling hives more and frames less. We should be glad to have this subject thoroughly discussed by our readers, because it will help to solve the problem of how to handle whole apiaries with less labor—in short, produce a ton of honey for less money. Now, Mr. Manum, we are all on tiptoe to hear from you.

## SPECIAL NOTICES.

### CHANGE IN PRICE OF EARLY PURITAN POTATOES.

We have been obliged to change the price of Early Puritans from 60 cts. per bushel, as advertised in GLEANINGS Aug. 15, to \$1.00 per bushel, or \$1.15 packed in new slatted boxes. Price per barrel will be \$2.50. Peter Henderson, in his new fall catalogue, charges just *double* above price.

### STRAWBERRIES.

Sept. 11.—Now is just the best time to make your strawberry-beds that you will have this year. We have on hand now lots of nice plants of all the varieties we advertise—Jessie, Haverland, Bubach, Gandy, and Sterling; and we can, in most cases, pack your plants so they can start on the next train after receipt of your order. Prices: 10 for 10 cts.; 100, 75 cts.; 1000, \$6.00. By mail 5c extra for 10, 25c for 100.

### AMERICAN PEARL ONIONS.

We still have plenty of nice sets left, and now is the time to plant them. The rows should be about a foot apart, and the sets may be put two and a half inches in the row. They ought to weigh from  $\frac{1}{2}$  pound to 1 pound apiece by the middle of May; and this year we sold most of our crop at 10 cts. a pound. The crop will be all off the ground by the time strawberries are gone, leaving plenty of time to put out early celery. Price 35c per qt. By mail, 10c extra. \$2.25 per peck. We have just got a lot of new seed of the American Pearl onions, which we will sell at \$3.50 per lb.;  $\frac{1}{2}$  lb., \$1.85; oz., 25 cts.;  $\frac{1}{4}$  oz., 10; packet, 5 cts.

### ONE-STORY CHAFF HIVES CHEAP.

Having adopted the Dovetailed chaff hive as our leader in this line, we still have on hand a good stock of the old-style 10-frame one-story chaff hives to take Simplicity upper story and furniture. To work this stock down we offer you a reduction of 20 cents a hive on any of the numbers as listed page 21 of our price list. This equals a reduction of 20 per cent on the hive without furniture. You may have the early-order discount of 5 per cent besides. This offer is made only to reduce stock, and we reserve the privilege to withdraw it at any time. This is a very good hive, especially for those who prefer the Simplicity combinations.

### ANCHOR PASTE FLOUR.

This is used like dextrine for pasting labels to tin, glass, etc. In many respects it is better than dextrine. It is mixed cold, while dextrine has to be mixed in boiling water. It will not sour nor mold, will keep in any climate, and contains no poison. If by evaporation it becomes too thick it is thinned by simply adding a little cold water. Its adhesive qualities are excellent. It comes put up in tin cans of four sizes, nicely labeled with directions.

Price of  $\frac{1}{2}$  lb. cans, 10 cts. each; by mail 20 cents.

"	"	1	"	15	"	"	33
"	"	2	"	25	"	"	60
"	"	10	"	1.00	"	"	Not available.

In lots of 1 doz. or more cans to dealers to resell, special prices quoted on application.

### GLEANINGS FREE TO NEW SUBSCRIBERS.

Our subscription list is constantly growing by a healthy vigorous growth, being not far under 11,000 at this time. We desire to increase to 12,000 as rapidly as possible, and are offering some special inducements to that end. There is a quarter of a year remaining before January, after this issue; yet we propose to give to new subscribers for 1892, at \$1.00 each, the rest of the year free. This is surely a strong inducement to get your neighbor bee-keepers to subscribe, especially when you consider that these numbers will contain notes of travel from the senior editor, who is going on an extended trip west and south to regain his strength after the sickness through which he has just been passing. You who have given frequent evidence of the enjoyment, help, and inspiration of his writings will be glad, no doubt, to put forth a little effort to widen the circulation of GLEANINGS and thus extend the influence of his writings. To repay you for your efforts in securing new subscriptions we will, if you send in your own renewal at the same time with a new name, and \$2.00 in cash, send you postpaid any of the following books.

*Merrybanks and His Neighbor*, a book of 228 pages,

half the size of this page, and over 60 illustrations. A. I. Root, author. This is a serio-comic serial that appeared in GLEANINGS years ago. Not only the grown-up folks, but children as well, will find it interesting almost to fascination, and likewise profitable. Regular price is 25 cents; but if more are wanted than the one we give you, we will make a special price of 15 cents postpaid.

*Robinson Crusoe*, in paper covers; 240 pages, illustrated. This old story needs no description. It is published in a great many different forms. The book we offer is a 25-cent edition, which we have always sold for 25 cts. by mail, or 20 with other goods. We now reduce the price to 15 cts., postpaid, or give it free on above conditions.

*The Christian's Secret of a Happy Life*, in paper covers. Over fifty thousand of this popular work have been sold, and it is just as good and true as ever. Given free for one new subscriber, with your own renewal, or the same in cloth binding for two names with your own renewal.

Please remember, that only the numbers of this year remaining after the subscription is received will be sent to new subscribers free, so you should go to work at once and secure the names as soon as possible. The earlier you do so, the greater the inducement.

## Last Chance

FOR THE SEASON OF '91.

If you wish ALBINO or GOLDEN ITALIAN QUEENS, send your order at once, as I will not have any for sale after Sept. 30. Catalogue free.

A. L. KILDOW, Sheffield, Illinois.

In responding to this advertisement mention GLEANINGS.

## MUTH'S Honey - Extractor.

Square Glass Honey-Jars,  
Tin Buckets, Bee-Hives  
Honey-Sections, &c., &c.  
Perfection Cold-Blast Smokers.

APPLY TO

CHAS. F. MUTH & SON, Cincinnati, O.

P. S.—Send 10-ct. stamp for "Practical Hints to Bee-keepers."  
Please mention this paper.



This is the knife we have sold for years as our 10-cent honey-knife. It has lately been improved by putting on a wire handle instead of the old one of cast iron. It is the invention of a woman, for work in the kitchen, such as chopping potatoes, turning pancakes, scraping kettles, etc. Many thousands have been sold for use in the kitchen, and they prove so satisfactory that the manufacturer makes the following guarantee:

Any purchaser who, after using the knife one month, may decide that she does not want it, may write me to that effect, stating the amount paid, whereupon I will return to her the said amount by mail.

R. K. TELLER.

They are excellent for scraping bits of comb and propolis from frames and hives, and can be used for uncapping. We have just bought our third lot of about a thousand, and offer them as follows:

Ten cents each. By mail, 15 cts., or 2 for 25 cts.; 85 cts per doz.; or by mail, \$1.20; \$9.00 per gross, by freight or express.

A. I. ROOT, MEDINA, OHIO.

## FOR SALE.

One of the best all-round grain, stock, and fruit farms in Virginia. Thousands of peaches, apples, and other fruits now bearing. Natural increase of apiary this year from 13 to 47 colonies. An old homestead of 800 acres that will be sold at a bargain. If interested, write for full description, price, etc.

**CYRUS H. KLINE,**

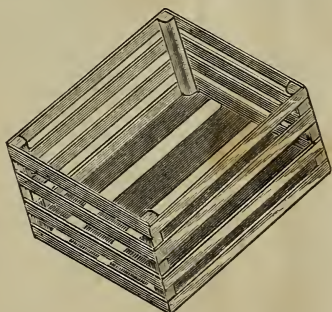
18-19d **BELLS, BEDFORD CO., VA.**

## FOR SALE!

Italian bees bred for business and beauty combined, for only \$4.50 (7-fr. Root hives), if sold by Oct. 1. Any number from 1 to 60. Guaranteed free from disease. Do not miss a good chance for a bargain.

17d **W. V. MOOREHOUSE, LAFAYETTE, IND.**

A New POTATO-BOX Made Entirely of Slats.



This kind of a box has been several times recommended, but we have not made them till now. We are having quite a trade on potato-boxes, and find difficulty in getting lumber to make the ends of one piece, so we have tried putting slats in both ends and sides as well as bottoms. The above cut does not fairly represent the box, but gives simply the idea. We make them the same size as the other styles. 14½x16½x12½ deep outside measure, with six slats on the bottom, five on each side and each end, and a slat up each corner. It makes a lighter and stronger box, and we can also furnish them cheaper. We put them up in packages of 15—two nailed up and the other 13 with nails, packed inside. Weight of the package, 100 lbs., and the price \$1.50, which equals 10 cts. each in full packages; 10 packages, 5 per cent off. In ordering, call this the *All slatted box*.

**A. I. ROOT, Medina, Ohio**

## THE PECOS VALLEY THE FRUIT BELT OF NEW MEXICO

Over 100 miles of irrigating canals now completed, each from 18 to 60 feet wide. 1 carrying 5 to 7 feet of water. Over 300,000 acres of the richest lands in the world already available for irrigation and farming under these canals, twenty-five per cent. of which are still subject to entry under the homestead laws.

Other lands for sale at \$15 to \$30 an acre and on easy terms.

The Pecos River being fed by never failing springs of immense size, the water supply for all the canals can carry is assured.

Climatic and soil conditions here are superior to those of Southern California. All the fruits grown there can be produced here, except oranges and lemons, while the Pecos Valley grows all the cereals, vegetables and grasses that can be grown anywhere on this continent, while the neighboring mines afford a home market for all products.

Our farmers raise two crops a year of grain and vegetables, five crops of hay, and stock grazes out doors all winter. Our climate is a perfect antidote for consumption and all throat and lung diseases.

Send for maps and illustrated pamphlets, giving full particulars.

**PECOS IRRIGATION & IMPROVEMENT CO.,  
EDDY NEW MEXICO.**

☞ In responding to this advertisement mention GLEANINGS.

## FOR ALBINO AND GOLDEN ITALIAN QUEENS, SEND TO A. L. KILDOW, SHEFFIELD, ILL.

1 untested Albino, \$1; 6 for \$5.  
1 tested Albino, June and July, \$1.75; August and September, \$1.50.

1 select-tested Albino, Aug. and Sept., \$2.50.

1 untested Italian, June, \$1; July to Sept., 75 cts.

1 tested Italian, June and July, \$1.50; August and September, \$1.25.

1 select-tested Italian, June, \$2.50; after June, \$2.

For particulars, send for descriptive catalogue.

☞ responding to this advertisement mention GLEANINGS.

**FOR SALE.** 20 colonies Italian bees at \$5.00 each. Simplicity hive, eight brood-frames, one broad frame filled with sections. Plenty of honey.  
16 17-18d **FRANKLIN THORN, Paterson, N. J.**

## IF YOU WANT BEES

That will just "roll" in the honey, try **Moore's Strain of Italians**, the result of twelve years' careful breeding. Reduced prices: Warranted queens, 80 cents each; 3 for \$2.00. Safe arrival and satisfaction guaranteed. Those who have never dealt with me I refer to A. I. Root, who has purchased of me, during past 11 years, 505 queens. Circulars free.

13-14d

**J. P. MOORE, Morgan, Pendleton Co., Ky.**  
Money-order office, Falmouth, Ky.

Please mention this paper.

7d

## BEE - HIVES ! SECTIONS !

AND ALL APIARIAN APPLIANCES.

Our Motto : Good Goods and Low Prices.

Catalogue free for your name on a postal card.

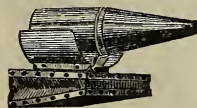
14tfdb

**LEAHY M'F'G CO.,**

**HIGGINSVILLE, Mo.**

Please mention this paper.

## \*BEST ON EARTH\*



ELEVEN YEARS  
WITHOUT A  
PARALLEL, AND  
THE STAND-  
ARD IN EVERY  
CIVILIZED  
COUNTRY.



**Bingham & Hetherington  
Patent Uncapping-Knife,**

Standard Size.

**Bingham's Patent Smokers,**

Six Sizes and Prices.

Doctor Smoker,	3½ in.,	postpaid ...	\$2.00
Conqueror "	3 "	" "	1 75
Large "	2½ "	" "	1 50
Extra (wide shield) 2	" "	" "	1 25
Plain (narrow) " 2	" "	" "	1 00
Little Wonder,	1½ "	" "	65
Uncapping Knife.....			1 15

Send promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Mill Grove, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, **F. A. SNELL.**

Vermilion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, **R. A. MORGAN.**

Sarabsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, **DANIEL BROTHERS.**

Send for descriptive circular and testimonials to

14tfdb **BINGHAM & HETHERINGTON, Abonia, Mich.**

☞ In responding to this advertisement mention GLEANINGS.

## Five-Banded Italians

Are the handsomest and gentlest bees I have ever seen, are good workers, and are not inclined to rob. My breeding queen, together with her bees, took **First Premium** at the Detroit exposition last fall. I can furnish untested queens for \$1.00 each, or 6 for \$5.00; tested queens, \$2.00 each; select tested, \$3.00 each. Safe arrival guaranteed. Make money orders payable at Flint, Mich. 17fdb

**ELMER HUTCHINSON,**  
ROGERSVILLE, GENESSEE CO., MICH.

In responding to this advertisement mention GLEANINGS.

## Bee-Hives, Sections, Etc.

**BEST GOODS at LOWEST PRICES.**

We make 15,000 sections per hour. Can fill orders promptly. Write for free, illustrated catalogue.

**G. B. LEWIS CO., WATERTOWN, WIS.**

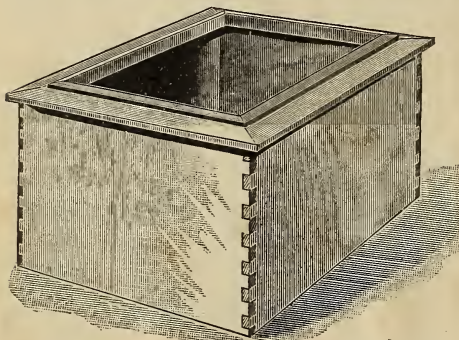
In responding to this advertisement mention GLEANINGS.

## TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. PAGE & KEITH, New London, Wis. 14tfdb

In writing advertisers please mention this paper.

## Dovetailed Winter Cases



The time to prepare bees for winter is at hand, and you will make no mistake in using our new winter cases. They are the cheapest, and we think they are the best.

### PRICE LIST OF DOVETAILED WINTER CASES.

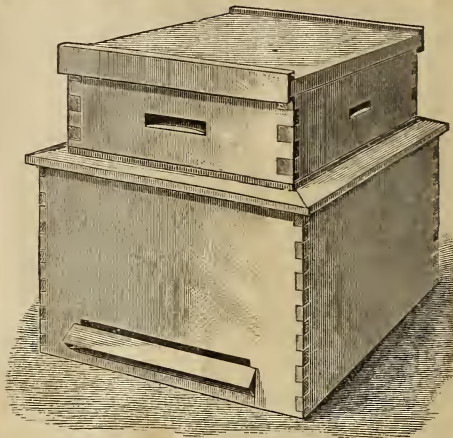
The winter case as above, includes the four boards forming the body, four pieces forming the rim, and four  $\frac{3}{4}$ -inch-square pieces for the lower edge. The chaff cushion and padding, as shown in Fig. 3, when sent put up, include chaff; but in flat, the cushion is sewed up ready for filling, and the strips of burlap or cotton are included to make the padding, but no chaff is included. For ten-frame hives not over 16 inches wide, outside measure, the same winter case can be used without the sticks and padding on the side.

NAME AND DESCRIPTION.	Nailed and p'd each	In flat each	10	W'ght of 10
Dovetailed winter case .....	.50	.40	3.50	80 lbs.
Dovetailed chaff cushion and padding.....	.25	.20	1.50	5 "
Winter case with cushion and padding complete.....	.75	.60	5.00	85 "
Dovetailed telescope cover, shown in Fig. 6.....	.35	.30	2.50	40 "
Rims for winter case .....		.12	1.00	20 "

To introduce them we allow the usual early order discount, which up to December, is 5 per cent.

**A. I. ROOT, MEDINA, O.**

## Dovetailed Chaff Hives.



If you prefer a permanent double-walled hive, the above is a safe one, and you will not find anything cheaper. Try a few.

### PRICE LIST OF DOVETAILED CHAFF HIVES.

By adding to the winter case a  $\frac{3}{4}$ -inch inside body  $8\frac{3}{4}$  inches deep, with double bottom and tarred paper; you have the material to complete the Dovetailed chaff hive as shown above, where a super and cover are also added. This makes the simplest and cheapest winter hive ever offered for sale. By adding to the price of the regular Dovetailed hive as listed, page 21 of our price list, 75c each nailed, 50c each in flat, or 40c each in lots of five or ten in flat, you get the price of the Dovetailed chaff hive complete, in the same combinations. The price of the separate parts will be as follows:

NAME AND DESCRIPTION.	N'd and p'd each	In flat each	5	10	W'ght of 10
Dovetailed chaff hive, no cover or furniture.....	1 20	.80	3 50	6 50	150 lbs.
Inside body with bottom, $\frac{3}{4}$ inch thick.....		.25	1 10	2 00	40 "
Outside bottom $\frac{3}{4}$ inch with tarred paper and supports.		.13	55 1 00	30 "	
Outside body with sticks, no rims .....		.30	1 40	2 50	60 "
Rims for dovetailed chaff hive or winter case.....		.12	55 1 00	20 "	

**A. I. ROOT, MEDINA, O.**

## DR. TINKER'S SPECIALTIES!

The Nonparell Bee-hive and Winter case, White Poplar Sections, Wood-zinc Queen-Excluders, and the finest and best Perforated Zinc now made.

Send for catalogue of prices, and inclose 25 cts. for the new book, **Bee-keeping for Profit.**

Address **DR. G. L. TINKER,**  
New Philadelphia, O. 21tfdb

In writing to advertisers please mention this paper.

## Tested Italian Queens.

By return mail, 75c each. Hybrids, 20c; 6 for \$1.

**J. A. GREEN, Dayton, Illinois.**

Please mention this paper. 12tfdb

### GOLDEN ITALIAN QUEENS.

Our 5-banded Italians are giving perfect satisfaction; gentle, excellent workers, non-robbers, and the most beautiful bees in existence. Won first premium at Illinois State Fair in 1890. The judge said, "The drones are the yellowest I ever saw." Queens warranted purely mated; and replaced if they produce hybrid bees. One warranted queen, \$1.00; six for \$5.00; tested, July, \$1.75; after, \$1.50; selected tested, \$3.00; breeders, the best, \$5.00. No foul brood. Safe arrival and satisfaction guaranteed. Reference, our P. M. S. F. & I. TREGO, Swedona, Ills. 1tfdb

Please mention this paper.

**Books for Bee-Keepers and others.**

Any of these books on which postage is not given will be forwarded by mail, postpaid, on receipt of price.

In buying books, as every thing else, we are liable to disappointment if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them for sale, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults, so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a \*, those I especially approve, \*\*; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §. The bee-books are all good.

**BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.**

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well by the amount required for postage on each.

8	Bible, <i>good print</i> , neatly bound.....	25
10	Nunyan's Pilgrim's Progress**.....	35
20	Illustrated Pilgrim's Progress**.....	75
This is a large book of 425 pages and 175 illustrations, and would usually be called a \$2.00 book. A splendid book to present to children. Sold in gilt edge for 25c more.		
6	First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50 c. Two copies will be sold for 75 cents. Postage six cents each.	
5	Harmony of the Gospels.....	35
3	John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon*.....	10
1	Gospel Hymns, consolidated Nos. 1, 2, 3, and 4, words only, cloth, 10 c; paper.....	05
2	Same, board covers.....	20
5	Same, words and music, small type, board covers.....	45
10	Same, words and music, board covers.....	75
3	New Testament in pretty flexible covers.....	15
3	New Testament, new version, paper covers.....	10
5	Robinson Crusoe, paper cover.....	20
4	Stepping Heavenward**.....	18
15	Story of the Bible**.....	1 00
A large book of 700 pages, and 274 illustrations. Will be read by almost every child.		
5	The Christian's Secret of a Happy Life**.....	25
8	Same in cloth binding.....	50
1	"The Life of Trust," by Geo. Muller**.....	1 25
1	Ten Nights in a Bar-Room, T. S. Arthur*.....	03
5	Tobacco Manual**.....	45
This is a nice book that will be sure to be read, if left around where the boys get hold of it, and any boy that reads it will be pretty safe from the tobacco habit.		

**BOOKS ESPECIALLY FOR BEE-KEEPERS.**

Postage	[Price without postage.]	
15	A B C of Bee Culture. Cloth.....	1 10
5	A Year Among the Bees, by C. C. Miller... 45	
5	Advanced Bee Culture, by W. Z. Hutchinson 50	
14	Bees and Bee-keeping, by Frank Cheshire, England, Vol. I. §.....	2 36
21	Same, Vol. II. §.....	2 79
or, \$5.25 for the two, postpaid.		
	Bees and Honey, by T. G. Newman.....	1 00
10	Cook's New Manual. Cloth.....	90
5	Doolittle on Queen-Rearing.....	95
2	Dzierzon Theory.....	10
1	Foul Brood; Its Management and Cure; D. A. Jones.....	09
1	Honey as Food and Medicine.....	5
10	Langstroth on the Hive and Honey-Bee. §.....	1 40
15	Langstroth Revised by Ch. Dadant & Son... 1 85	
10	Quinby's New Bee-Keeping.....	1 40
5	Thirty Years Among the Bees, by H. Alley. 25	
4	Success in Bee Culture, by James Heddon 46	
	Handling Bees. By Langstroth. Revised by Dadant.....	8
	Bee-keeping for Profit, by Dr. G. L. Tinker The Apiary; or, Bees, Bee-Hives, and Bee Cul- 25	
5	The Honey Bee, by Thos. William Cowan... 95	
	ture, by Geo. Neighbour & Sons, England. § 1 75	
	British Bee-keeper's Guide - Book, by Thos. Wm. Cowan, Esq., England. §.....	40
3	Merrybanks and His Neighbor, by A. I. Root 25	
<b>MISCELLANEOUS HAND-BOOKS</b>		
5	A B C of Carp Culture.....	35
3	A B C of Potato Culture, Terry*.....	35
This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations.		
5	A B C of Strawberry Culture, by T. B. Terry and A. I. Root, 144 pages; 32 illustrations 35	
5	An Egg-Farm, Stoddard**.....	43
5	Amateur Photographer's Hand-book**.....	70

	Barn Plans and Out-Buildings*.....	1 50
	Canary Birds, Paper, 50 c; cloth*.....	75
	Draining for Profit and Health, Warring... 1 50	
5	Eclectic Manual of Phonography; Pitman's System; cloth.....	50
6	Fuller's Practical Forestry*.....	1 40
10	Fuller's Grape Culturist**.....	1 40
10	Farming for Boys*.....	1 15
This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.		
7	Farm, Gardening, and Seed-Growing**.....	90
This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.		
10	Gardening for Pleasure, Henderson*.....	1 40
While "Gardening for Profit" is written with a view of making gardening PAY, it touches a good deal on the pleasure part; and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds without the speech point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations.		
12	Gardening for Profit, new edition**.....	1 85
This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts.		
10	Gardening for Young and Old, Harris**.....	1 25
This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.		
10	Garden and Farm Topics, Henderson**.....	75
	Gray's School and Field Book of Botany... 1 80	
5	Gregory on Cabbages; paper*.....	25
5	Gregory on Squashes; paper*.....	25
5	Gregory on Onions; paper*.....	25
The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.		
10	Household Conveniences.....	1 40
2	How to Propagate and Grow Fruit, Green* 25	
2	Injurious Insects, Cook.....	50
10	Irrigation for the Farm, Garden, and Orchard, Stewart*.....	1 40
This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain, during our great droughts, is the great problem before us at the present day. The book has 274 pages and 142 cuts.		
3	Maple Sugar and the Sugar-bush**.....	35
By Prof. A. A. Cook. This was written in the spring of 1887 at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's plain, simple style, combining wholesome moral lessons with the latest and best method of managing to get the finest syrup and maple sugar, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.		
1	Poultry for Pleasure and Profit*.....	10
11	Practical Floriculture, Henderson*.....	1 35
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